



CLINICAL NOTES

ON

C A N C E R

S N O W

M15942

149 A



22102086201

CLINICAL NOTES ON CANCER

Presented to the Library
by Ernest Hart Esq.

BRITISH MEDICAL
ASSOCIATION

CLINICAL NOTES

ON

CANCER,

ITS ETIOLOGY AND TREATMENT.

*With special reference to the Heredity-Fallacy;
and to the Neurotic Origin of most cases of Alveolar
Carcinoma.*

BY HERBERT L. SNOW, M.D. (LOND.), ETC.

SURGEON TO THE CANCER HOSPITAL, BROMPTON.



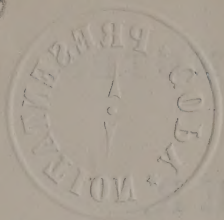
LONDON :

J. & A. CHURCHILL,

11, NEW BURLINGTON STREET.

1883.

-9360682



WELLCOME INSTITUTE LIBRARY

WELLCOME INSTITUTE LIBRARY

WELLCOME INSTITUTE LIBRARY

M15942

WELLCOME INSTITUTE LIBRARY	
Coll.	welMOMec
Call	
No.	QZ 200
	1883
	S67e

PREFACE.

THE following pages seek to convey, as briefly as possible, the practical experience of several years' work among cancerous patients. I have abstained from quoting rare cases which served to inculcate no useful lesson; but, on the other hand, have endeavoured to emphasize those points of clinical importance which seemed to me misconceived or unduly neglected; and, in one especial particular, to point out the fallacy of a widely-prevalent view, which I believe to work much mischief. No attempt has been made at elaborate description or exhaustive investigation; but the impressions received through constant familiarity with common every-day cases, and the deductions to which they gave rise, are set down "without prejudice." However imperfectly this has been done, I trust that the present little work, as a conscientious record of such observations, will not be found altogether useless.

40, NORFOLK TERRACE, BAYSWATER,

October, 1883.

CONTENTS.

CHAP.	PAGE
I. INTRODUCTORY—GENERAL CONSIDERATIONS .	9
II. CAUSES OF CANCER	14
III. FALLACIES RESPECTING CANCER: (A) HEREDITY; (B) THE CANCEROUS DIATHESIS .	18
IV. THE NEUROTIC ORIGIN OF ALVEOLAR CARCINOMA	24
V. GENERAL CONSIDERATIONS ON THE TREATMENT OF CANCER	32
VI. MALIGNANT DISEASE OF THE FEMALE BREAST	36
VII. UTERINE CARCINOMA AND EPITHELIOMA .	50
VIII. EPITHELIOMA OF THE TONGUE	58
IX. EPITHELIOMA OF LIPS, FACE, VULVA, ETC. .	69

APPENDIX A.

	PAGE
BRIEF REPORT OF ALL THE CASES OF BREAST CARCINOMA IN THE CANCER HOSPITAL ON AUGUST 24TH, 1883	73

APPENDIX B.

MISCELLANEOUS CASES ILLUSTRATING THE ORIGIN OF ALVEOLAR CANCER, AND OF SARCOMA . . .	78
---	----

APPENDIX C.

ILLUSTRATING THE ORIGIN OF TWENTY-SIX CASES DIAGNOSED AS SARCOMA	92
---	----

CLINICAL NOTES ON CANCER.



CHAPTER I.

INTRODUCTORY.—GENERAL CONSIDERATIONS.

THE term “cancer” is (popularly) applied to a group of diseases, whose most prominent common characteristic is their “malignancy”; that is to say, speaking very generally, their resistance to all known medicinal agents; their proneness to invade other organs and tissues of the body than those in which they have originated; their liability to recur after removal by caustics or by the surgeon’s knife; the pain to which they commonly give rise, and the peculiar loathsomeness which attends the progress of many forms; and their tendency to destroy life. The degree of this malignancy varies greatly (1) according to the variety of cancer; (2) to the organ or tissue attacked; (3) to the age and constitution (probably also, in some measure, to the habits) of the patient,—the first of these being probably by far the most important factor. We meet also with many anomalies and irregularities, of course, of symptoms, and of progress; as

when an ordinarily slow-growing form, in certain sites proves rapidly fatal; or when a variety, almost always speedily destructive to life, remains stationary in some individual case for many years. Epithelioma of the tongue may be cited as an instance of the first; those cases described by Sir James Paget and others, of what was then classed as encephaloid cancer, but would now probably be termed round-celled sarcoma,—of the second. The long duration (ten years or more) of rectal epithelioma before it proves mortal; the very varying degrees of malignancy shown by ordinary scirrhus of the breast; and the general reluctance, so to speak, of sarcoma (though it hardly amounts to more than this) to invade the lymphatic glands; also strike us as deviations from rule. Yet these very exceptions combine with clinical experience to show that however much malignant diseases may differ in their microscopical anatomy, they yet follow, more or less approximately, the same general laws, and may be most appropriately considered under one head, as a single class. Unfortunately their nomenclature is at present somewhat vague. We require a generic name which will embrace the whole; and it is much to be regretted that the term “cancer,” which formerly did so, and is still thus used in popular parlance, should tend more and more to be technically limited to alveolar carcinoma. The word is here employed in its widest significance; and I imagine that we gain more correct views as to prognosis and treatment

The following provisional classification will roughly serve to show prevailing pathological views, more or less transitional:—

II. Sarcoma	Round-celled Spindle-celled Mixed Glioma Myeloid	{ Sub- varieties	{ Osteoid. Melanoid.
(origin from			
connective			
tissue cor-			
puseles; no			
ocular			
structure)			

III.

Epithelioma
(proliferation
of epithe-
lium on
skin or
mucous
membrane)

Scaly

Columnar

{ (sub-variety) :
Duct Cancer.

IV.

Lymphade-
noma
(proliferation
of lymph-
atic gland
elements).

Hovering on the border-land of the malignant region, we find myxoma, psammoma, keloid, the molluscum fungoides of Tilbury Fox, lupus, etc.

It is to be observed that so-called "villous cancer" is at first a papillomatous growth, not at all malignant, and precisely analogous to a papiloma of the skin. It tends, of course, ultimately to become "malignant," when the submucous tissue is invaded by the proliferating epithelium; but may prove fatal by hæmorrhage before that takes place. The term is an old-fashioned one, which would be better discarded altogether; and the same may be said of "hæmatoid," which word, as expressing a property more or less common (only in varying

degrees) to all forms of malignant disease, has not been inserted in the above table.

The old-fashioned "cancer-cell" (with its roundish shape, large excentric nucleus, pale outline, and granular contents) found in alveolar carcinoma, and in some forms of sarcoma, was once regarded as the type and most pathognomonic microscopic indication of malignity; a view which, of course, cannot be maintained in the light of more recent researches. Yet it seems now to be unduly discredited; and its pathological and diagnostic importance as much underrated at the present time, as formerly they were improperly magnified. We are, however, at least entitled to say, that, although cells exactly similar in outward appearance are found normally in certain situations within the body; yet when they are a prominent and prevailing feature in any tumour, such a growth is unmistakably malignant.

One point again which strikingly sets this class (at least the more familiar and malignant members of it) apart from that of the simple non-malignant tumours, is the existence of a definite and ascertainable cause in almost all instances of the former; of none such, as a rule, in the latter. In the ensuing chapters I propose to regard the influences most prevalent and important in the origination of cancer.

CHAPTER II.

CAUSES OF CANCER.

IN the case of EPITHELIAL cancer there does not appear to be any *predisposing* cause, except lowered healing and recuperative power from advancing age ; and the existence of growths or lesions, such as warts, syphilitic or other ulcers, broken teeth, etc. ; or a congenital deformity, as phimosi, which may render a part prone to be irritated by external agencies. The *exciting* cause is always some continued mechanical irritant. On the lip any small fissure is continually rubbed (in the majority of cases) against a sharp projecting tooth, or tooth-stump,—often by contact with the pipe-stem in smoking. Sometimes a little crack arises in situations, as at the angles of the mouth, where healing is prevented by the natural motions of the adjoining parts. We can easily understand why the upper lip is affected less frequently than the lower. The comparative immunity of women from epithelioma in this situation is explicable by their greater regard to personal appearance, which would natur-

ally induce attention to any unsightly crack or fissure ; and by their non-indulgence in the habit of smoking.

The same factors produce epithelioma of the tongue ; but in addition, syphilitic warts, gummata, and ulcers are very common forerunners ; and, if neglected, are almost sure to result in malignant disease.

On the skin or genital organs, some papillomatous growth almost invariably precedes ; and being irritated, either by the fingers, or by the natural moisture, heat, and motions of the parts, develops into cancer. The peculiar effect of soot in the production of epithelioma is remarkable ; the scrotal affection in chimney-sweeps can be readily explained on mechanical grounds ; and cases now and then occur which show that the skin generally is peculiarly susceptible to the malignant influence of this irritant.

From what we see in external parts, we are bound to infer that a similar process takes place in the generative, respiratory, and intestinal mucous membranes. In the latter instance, some narrowing of the calibre of the intestine, inflammatory or otherwise, very generally precedes, and in time results in a crack, which, from its situation, cannot heal ; or the passage of solid bodies, or of hard fæces, may scratch the mucous surface ; or chronic ulceration, at first non-malignant, may result from other causes, on which I need not dwell. In laryngeal epithelioma a papillo-

matous growth is the forerunner; and so, often, also in rectal cancer.

Generally speaking, all that is wanted for the production of epithelioma appears to be continuous exposure of the subcutaneous or submucous connective tissue to the intrusion of epidermic or epithelial cells.

In the DUCT-CANCER of Mr. Butlin and Dr. Thin, we see a precisely similar process of long-continued mechanical irritation giving rise to a deep-seated cancer in the female breast.

Turning now to ALVEOLAR CANCER and to SARCOMA, we find, in a rather small proportion of cases, a single *injury* the immediate forerunner. This is most noticeable in breast-cancer, that organ being particularly exposed to contusions. Thus, of 382 patients so affected, 56 gave a history of injury, and 14 were doubtful on that point. I think, when we consider the influence of preconceived ideas, the dread which all women feel of a blow on the breast, and the universal disposition to account for the appearance of a cancer by some such reason, we may fairly doubt whether the figures here given correctly represent actual facts.

In the great majority of instances, at any rate, the causation is explicable by no mechanical means. We find that, among 276 cases quoted by Sir James Paget ("Surgical Pathology," 3rd Edition), 122 occurred between the ages of forty and fifty; and in another set of 158 there were 73 during the same decade. After fifty there is a greatly

diminished frequency. Sir James also appears to find "medullary" cancer most prevalent between forty and fifty; but a hardly diminished frequency between fifty and sixty.

On the other hand, with Epithelioma (which proceeds on quite different lines), he finds a progressive increase at every decade up to seventy; and accounts for the small number of cases above that age in his table, by the relative few who appear at hospitals so late in life.

An idea widely prevails that Scirrhus is a process of degeneration; and as much a result (only more unusual) of senility, as the absorption of the lower jaw, or as grey hair. Thence the inference is drawn that any cure is out of the question. The above figures directly controvert such a view; were it correct, we should have as progressive an increase with each successive decade as with epithelioma; instead of a steady decrease. Again, it is a matter of daily observation, that in quite advanced life scirrhus runs a very chronic and often atrophic course; is slow to infect the glands; is less prone to recur after extirpation, and takes a far longer time to do so,—all which phenomena altogether negative the degeneration theory. On the other hand, we find scirrhus run its most rapid course in the young and plethoric; and in those whose vital processes are most active.

CHAPTER III.

FALLACIES RESPECTING CANCER—(A) HEREDITY; (B) THE CANCEROUS DIATHESIS.

THE idea of HEREDITY as a factor in the production of malignant disease is firmly rooted in the public mind; it is stated in text-books as an unquestioned fact; is sanctioned by the authority of great names (and especially by that of Sir James Paget); and finds almost universal acceptance among the medical profession. One seldom meets with a cancerous patient who has not been interrogated on this point by every doctor whom he or she may have consulted. So far as regards the patient, the consequences of such a deep-rooted belief are twofold. (1) If there is no family history of cancer, the insidious malady is neglected, in all the confidence of security, till too late. (2) If any relative happens to have suffered in this way, the mental attitude of expectancy and of continuous anxiety thus occasioned, prove a very sword of Damocles; banish all peace from the mind; and are powerful agents in bringing on the complaint so much dreaded. As regards the medical

man, if he always look for traces of hereditary predisposition, and rely at all on their presence or absence, he will be very prone to fall into errors of diagnosis; whose consequences to the unfortunate patient (to say nothing of his own repute) cannot be over-estimated.

Remembering his immense field of observation; the conscientious patience which he has displayed in dealing with the whole field of cancerous diseases; and the great powers he has brought to bear upon this; it is with the utmost diffidence that I venture to impugn, upon the question of heredity, the high authority of Sir James Paget. When I was first brought into contact, on an extensive scale, with cancer, I was as fully convinced as any one of the potency of hereditary transmission. It is only from finding how very exceptional are the cases which lend colour to such a view; how pernicious the latter is, to both doctor and patient; remembering also the long life and robust vitality of an error which shelters itself under the ægis of a great name—that I have ventured upon the present feeble attempt to controvert a theory, I cannot help regarding as most mischievous and obstructive.

Of 358 cases of breast-cancer, 54 gave some account of cancer in at least one member of their families, and 7 were doubtful.

Of 268 uterine cases, 23 gave a family history, and 11 were doubtful.

Of 108 cases of epithelioma in various external sites, 4 gave a family history, and 2 were doubtful.

Of 31 cases of sarcoma, 3 gave a family history, and 1 a doubtful ditto.

Now, considering how universal is the conviction of a prevailing hereditary tendency; how naturally such would be sought for, and established on most insufficient grounds; how loose would be the recollection of most people (and especially of hospital patients, from whom my statistics are chiefly drawn) as to the maladies of relatives dead years before; and how imperfect their opportunities of knowing what really was the matter, have generally been—we are, I think, well entitled to reduce the above percentage of patients with a cancerous family history very considerably. And, again, among the cancerous relatives, there must have been many cases of epithelioma, in which an obvious local cause of irritation can always be found when we have the necessary opportunities; and which, of all forms of cancer, least lends itself to favour the theory we are considering.

But even without such deduction, provided a number of patients at any general hospital be taken indiscriminately, and questioned as to their having lost relatives by cancerous maladies, I am convinced it will be found that as large a proportion as the above will answer in the affirmative. To test this point in some measure, I interrogated 52 patients who presented themselves at the Cancer Hospital with complaints (all tumours being excluded) in no way allied to cancer, and found that 13 (or one-fourth of the whole) affirmed that at least one

relative had died from this complaint. Of course, however, in people coming to such an institution with whatever malady, large allowance must be made for the pre-conceived idea.

It cannot be denied that occasionally we do meet with cases (such as those related by Sir James Paget) in which several members of a family have undoubtedly succumbed to malignant disease; but such are rare; are very much the exception to our daily experience; and cannot be taken to prove a law, when in so particularly marked a minority. When they do occur, I strongly believe that the explanation is often, at least, to be found, not in any hereditary tendency, but in the natural result of expectancy, and of continued depressing emotion.

I long since found that in any patient appearing at a cancer hospital with a cancerous family history—and the more copious this was, the more strongly does the remark apply—the probabilities were largely in favour of their complaint being anything rather than cancer.

Lastly, I need hardly remark that the Heredity theory,—however satisfactorily it may be supposed to explain transmission,—in no way accounts for the primary origin of the disease.

Another fallacy which was once generally believed in, and which may be said hardly yet to be thoroughly exploded, is the idea of a “**CANCEROUS DIATHESIS**”—a peculiar habit or condition of the body, of which the malignant deposit was only the local manifestation. This was a fragment of the

old humoral pathology ; it served to hide our ignorance of cancerous causation ; unfortunately, it also served to proclaim the uselessness and hopelessness of surgical treatment.

The form of cancer which most countenances this theory is the soft, round-celled sarcoma (formerly classed with encephaloid cancer), springing from bone, and in young people. Here the first symptoms of the disease are remarkably obscure and insidious, and are (probably for some weeks) referred to rheumatism or neuralgia. By the time a tumour makes its appearance, numerous germs or emboli (so to speak) of the loosely-cohering morbid structure have been conveyed to distant parts of the body ; and have found in other portions of the skeleton an especially favourable nidus. So, after amputation (supposing one of the limbs affected), in spite of marked temporary improvement in the general health, and a stump healthy to the end ; yet the patient soon droops again ;—and, after an early death, almost every internal organ, and many of the bones, are found invaded by the new growth. The cases described by Mr. Barwell, under the title “Acute Traumatic Malignancy,” fall into the same category (“British Medical Journal,” February 2nd, 1882). Yet no valid reason is apparent for separating these from other forms of malignant disease ; the only difference being in the rapid progress, and usually in the insidious origin of the former—a difference of degree, not of kind.

By any one who has watched the progress of

cancer in its ordinary forms ; has viewed it gradually extend from a nucleus to the surrounding tissues, and along the nearest chain of lymphatics to the lymph-glands ; has seen one of these after another successively enlarge ; after extirpation, has found the disease return either by tiny nodules under the cicatrix or in the skin, or,—these remaining healthy to the last,—in the adjoining lymphatic glands ; it is very difficult to understand how such a theory could be held for a single instant. And in the case of such able surgeons as the late Sir Benjamin Brodie, who have actually maintained and taught it, we can but remember that

“Forsan et dormitat Homerus.”

That the very partial success with which, it must be confessed, our best efforts in the direction of surgical treatment are too often crowned, and the natural desire to excuse our failures,—obscure our scientific vision, and preclude an impartial judgment of natural phenomena.

More extended observation shows that malignant disease always originates from one centre (of course, excluding those exceedingly rare cases in which two distant organs, as the breast and uterus, become affected simultaneously and independently), and radiates from this as from a focus. Hence that surgical measures offer chances of successful treatment in exact proportion to their promptness and their boldness.

CHAPTER IV.

THE NEUROTIC ORIGIN OF ALVEOLAR CARCINOMA.

THUS we have seen that in the great majority of cases of Alveolar Carcinoma, and of Sarcoma, there is no history of any mechanical injury which can be described as the exciting cause; the theory of "hereditary tendency" proves baseless, and that of a "cancerous diathesis" finds a daily decreasing number of supporters. Yet we need not, therefore, consider the origin of these diseases (to quote the old text-books) as involved in mystery. Failing injury, one antecedent (which may fairly, I think, be styled a cause) will be found, if closely sought for, in all instances; this is the existence of one or more factors tending to produce lowered vitality, —in other words, prostration of the nervous system.

I am well aware that depression of mind as a forerunner of cancer has been noticed by numerous observers, and especially by the greatest in this field, Sir James Paget; so that I can hardly claim

for the above that it is "any new thing." Yet I scarcely think they have assigned to their observation the weight it deserves; nor, so far as my limited knowledge goes, has it materially influenced medical thought, or the views held by the bulk of our profession. And even among those who have described it, the field of vision would seem to have been obscured by false considerations of hereditary tendency, and by other injurious theories.

To say that cancer (of course excluding epithelioma) is, teleologically speaking, a disease of the nervous system, is, at first sight, a somewhat startling hypothesis; yet, on further examination, this will be found not only to explain much that is otherwise obscure in dealing with individual cases, but also not at least to be incompatible with the latest developments of modern thought, or with the most recent results of scientific investigation.

Almost all the domains of science and of thought are being invaded, more or less rapidly, by the great conception which we associate with the name of Charles Darwin; and although, so far, pathology would seem to have resisted the application of the evolution theory, yet it is hardly probable that, in the end, this will escape. Travelling upwards from the ascidian to the vertebrate, we are led to regard each organ as successively developed and differentiated, so determining the various species; and we find the stability of such organ vary inversely with the degree of specialisation; that is to say, the more recently it has been developed, the more

(generally speaking) it tends to vary in different members of the same species ; and the higher the perfection it has reached, the greater the proneness to disease and to degeneration ; in other words, the greater its liability to be moulded by external influences in the individual. Now, superiority in the scale of being is determined, for the most part, by, and depends upon, the degree of development and of specialisation attained by the nervous system ; and this, of course, has reached its highest point of complexity in the vertebrates, as compared with the rest of the animal kingdom ; in man, relatively to the other vertebrates.

On the principles of evolution, therefore, the last-developed organ, and that which has reached its highest perfectibility, yields soonest to the strain ; we should hence, *à priori*, and setting aside other considerations, expect to find advancing civilization characterized by an increase (both in frequency and in variety) among diseases of the nervous system. I need hardly add that the natural tendency to such increase is vastly enhanced by aggregation of the population in large towns ; by a keener struggle for existence ; by over-education and excessive multiplication of examinations ; by all sorts of artificial and unnatural habits, such as curtailment of the hours required for sleep, ill-ventilated dwellings, improper diet, and the too great use of stimulants ; above all, by worry.

We accordingly see a progressive increase in the relative frequency of insanity and its congeners ;

we find sclerosis, in its various forms, gradually becoming more prominent in our text-books ; new and hitherto unnoticed forms of nervous derangement, functional or otherwise, are pointed out almost daily. Nor in the paucity of our knowledge regarding such obscure maladies as Addison's disease, pernicious anæmia, diabetes, etc., can it be pretended that we have any adequate measure of disease primarily owning a neurotic origin. Among those people who are still able to play their part in active life, we find the majority dyspeptic, brooding, nervous, easily overborne by slight troubles, prone to stimulants and narcotics ; if females, delicate, hysterical, chronic invalids, full of imaginary ailments. From such, granted some extra strain, such as the loss of a relative, pecuniary or other troubles, are manufactured our cancer-patients ; or, at least, that large division who suffer from carcinoma.

An obvious instance of coarse organic lesion, undoubtedly due to nervous ditto, is the joint-affection in locomotor ataxy ; while, for a case showing the direct influence of nervous emotion upon malignant disease (although such influence was then exerted in an opposite direction to that I have indicated), perhaps I may be allowed to refer to No. 44 in Mr. Nunn's work on "Cancer of the Breast ;"—in which a mental shock caused multiple malignant tumours to shrink visibly in size, and temporarily arrested the progress of the malady.

Considering these forms of cancer as of primarily

nervous origin, we can readily understand how they increase in frequency with advancing age, up to a certain point; when that point is reached, and the sensitiveness of the nerves is blunted, a decrease sets in;—which, I take liberty to think, would be still more gradual and more obviously progressive than it is, were every one, so to speak, “equally old at the same age.” We see why cancer is so chronic and so much less “malignant” in very advanced life. We comprehend why women, whose nervous systems are so comparatively sensitive, are so much more frequently the subjects of cancer than men. We find an easy explanation (without calling in geological conditions of soil, etc.) of the fact established by Mr. Haviland, that cancer is by far the most prevalent along the great rivers; where large towns are situated, and where competition is most keen. We comprehend how debilitating conditions of any kind, such as trouble, hard work, loss of sleep, severe illness, even accidents when no local injury has been sustained, are followed by malignant disease.

Reasoning deductively again from the view in question, we should naturally expect to find that carcinoma and sarcoma were more prevalent in classes of persons most prone to the action of debilitating agencies; among women than men; among the married females than the single. The former comparison needs no statistics; for the latter, among 174 patients at the Cancer Hospital suffering from uterine cancer, 146 were married, 21

uterine M. 129.0558
W. 20.7582
S. 24.186

Calculated percentage

were widows, 7 only were single ; among 223 with ditto of the breast, 147 were married, 38 were widows, and 38 were unmarried.

Upon the effect of harassing occupations I have no figures to show, but I imagine I have noticed among single women, that cancer is especially prevalent among school-mistresses, sempstresses, and domestic servants. I would like to add, also, that, so far as I have seen, it is among single women that we generally find exceptional varieties of cancer, as sarcoma of the breast, or of the fundus uteri ; but this is only an impression.

Again, with rectal cancer, which was formerly considered scirrhus, but now ranks with the epitheliomata, there is a noteworthy absence of previous specially debilitating conditions (see p. 51).

It cannot, of course, be claimed that the theory is more than provisional. We know very imperfectly how the nervous system influences nutrition and structure ; but no man doubts that it does influence them, any more than he disbelieves its action on the circulation. And in the production of cancer, nervous depression may act indirectly ; as, for example, fear or a chill appears to favour the lodgment and multiplication of the fever-bacillus. All we can say with confidence is that, (in the absence of a mechanical cause), we rarely fail, on careful inquiry, to find a functional nervous one. And this not alone as predisposing, but as a direct excitant ; the instances of which, it need hardly be said, are far more obvious among the rich and well-

W- 26.6039 }
S- 30.997 }
population of married, married
single women in the female
population between age 35 & 55

919 hundred

17 per cent

to-do, than among the poor,—many of whom pass all their lives in a state of more or less harass and anxiety.

Of 140 cases of breast-cancer, 103 gave an account of previous mental trouble, hard work, or other debilitating agency.

Of 187 uterine ditto, 91 showed a similar history.

Respecting sarcoma, my opportunities for observation entitle me to speak with far less confidence ; but so far as these have extended, it appears to me to proceed on nearly the same lines as alveolar carcinoma—indications of hereditary taint being mostly wanting ; and debilitating conditions often proceeding. I append a table (see Appendix C) of twenty-six cases diagnosed as sarcoma, showing their probable causation.

These statistics, taken mainly from hospital records, in the hurry of hospital work, and founded on answers nearly always given in reply to the stereotyped question, “Did you suffer from mental trouble?” or, “Was there anything particularly to weaken you before the tumour appeared?” will probably not be considered strong enough to bear out all that I have said above. It is only by gaining an intimate acquaintance with the principal incidents in their life, that one can hope to form a correct judgment upon the point in question. Among the poorer classes, general questions, especially on matters of feeling, are quite inadequate. The truth is suppressed, sometimes through reti-

cence, sometimes through want of memory or of attention; and one may have to institute a complete cross-examination before the most obvious sources of trouble are disclosed (see Case No. 4 in Appendix A). I have, therefore, with the kind permission of my colleagues, taken a brief history of every patient with any form of breast-cancer, who was an inmate of the Cancer Hospital upon August 24th, 1883; and have placed these in an appendix. They refer to one organ only, that it may not be supposed there was any selection; and give an average view of the conditions preceding the appearance of a cancer in the general run of such cases.

CHAPTER V.

GENERAL CONSIDERATIONS ON THE TREATMENT OF CANCER.

It need hardly be said that, in the present state of our knowledge, the only manner in which cancerous diseases can be absolutely cured is by early and free extirpation wherever practicable; a wide area of apparently healthy tissue around the tumour should be removed; and seeing that, even after sufficiently wide operations, the disease tends to recur in the nearest chain of lymphatic glands, these, too, when it is possible, should also be taken away, so as to *get ahead of the disease*. The only advantage which escharotics commonly have over the knife (so far as regards the future prospects of the patient), is the fact of their destroying a larger amount of surrounding tissue than the surgeon would venture to cut out.

It may be pointed out, in connection with what has gone before, that the most beneficial medical treatment is that which is directed towards tranquilizing the nervous system. Opium and morphia

judiciously given, not only allay pain, but have a marked influence in improving the patient's general health; and, I believe, in prolonging life. I was particularly struck with the life-sustaining effects of morphia in a case I attended some years ago, and on which—as, viewing the painfully pathetic originating circumstances, it was perhaps the most deplorable I have ever met with, besides being in that respect typical—I will venture to dwell a moment:—

A lady, very vivacious and attractive, of enthusiastic temperament, and a Roman Catholic, had in early youth enfeebled her health by self-mortification, devotion to religious exercises, and by hard work among the poor. Having inherited a moderate fortune, she was subsequently induced, by the machinations of a relative, to marry a solicitor, apparently in good practice, and well off. Within four days after the wedding she noticed in him symptoms of insanity; it soon came out that his sister was then in a lunatic asylum, that he had himself been under similar restraint; lastly, that he was impecunious, had married his wife solely for her money, and had fraudulently misrepresented his own pecuniary position with the aid of false entries in a banker's pass book. In ensuing years the husband spent all his wife's fortune, offended all her relatives by borrowing money from them, and was extremely given to intemperance; yet, withal, had the ability perfectly to conceal his mental condition from everybody but his wife. The latter had five children in rapid succession, the last of them an idiot; there were besides several miscarriages. Owing to the estrangement of all her friends she was unable to separate from her husband; suffered all manner of ill-usage at his hands; was often three or four nights together without sleep, afraid to close her eyes for a moment,

while he paced about the room, frequently threatening to kill her. At last the climax was reached, when the poor creature spent forty-eight consecutive hours driving about with her husband through the streets of London in cabs, he refusing to go to any lodging, or to leave her. Acting then on the advice of a passing policeman, and being thoroughly worn out, she went to the nearest police-station, and gave herself and her husband in charge. Her relatives were sent for; measures at once taken for placing the husband in an asylum, and for the proper care of the children; and her troubles seemed at an end. Within a few weeks, however (as might almost have been predicted), a scirrhus cancer appeared in the left breast; was removed by an able provincial surgeon, but speedily recurred. Towards the close of the patient's troubled life, the stomach altogether refused its office; any attempt to administer food excited severe vomiting; and owing to uterine retroversion, with acute general hyperæsthesia, enemata could not be resorted to. Although greatly emaciated to begin with, she, at the last, remained thirty-two days without taking anything by the mouth but a little water; and, showing then no symptoms whatever of exhaustion would, to all appearance, have lived much longer, but for an accidental attack of hæmorrhage. A daily hypodermic injection of morphia was her only sustenance throughout this long period.

With morphia, of course, should be conjoined rest, fresh air, easily digested and nourishing food, and all measures calculated to soothe and divert the mind. It is remarkable how patients, even with very advanced disease, usually improve, for the time being, when they are admitted into hospital. Tonics are given in ordinary practice, I imagine, to every one, as a matter of routine; they serve as

“placebos,” and sometimes improve appetite ; but it may be questioned whether they do much or any real good.

There is surely no reason to abandon hope that some day a remedy may be discovered which will have a specific influence on the maladies in question ; whether by inducing degeneration and absorption of the cells—the real vital elements ; or by compelling these to undergo higher development (for the more closely they resemble normal elements, as fibrous tissue, the less potent they are for evil—at least, so far as scirrhus is concerned) ; or, seeing that the nervous system seems to play so prominent a part in causation, by some subtle influence conveyed through this channel. But as no medicinal agent has so far been discovered through *à priori* reasoning, such speculations are not of much use,—unless, it may be, to combat despair.

Under the present conditions of existence in the world, we can do little in the way of prophylaxis. We may counsel people to avoid overtasking their strength, and to bear the ills of life with equanimity ; above all things, not to “give way” to any grief—advice much more easily carried out than feeble folk, who weakly brood over every trifling misfortune, and in particular make it an article of religion to nurse their grief at the loss of any near relative, as long and as deeply as possible, will readily believe. But, like Benedick, we shall only “talk, when nobody marks us.”

CHAPTER VI.

MALIGNANT DISEASE OF THE FEMALE BREAST.

THE form of cancer with which we have here to deal is, of course, Scirrhus in the great majority of cases; less frequently, Sarcoma and Encephaloid; rarely Colloid. The origin of all these appears to be similar; in a certain proportion, injury. Thus, of 382 cases, 56 gave a history of previous blow or fall, and 14 were doubtful; in many of these 56 the accident had taken place long before the tumour made its appearance; and although the latter was naturally referred to the former by the patient and her friends, we at least may doubt the causal relation; 312 could remember no such occurrence.

Excluding injury, we are sure to find some debilitating cause at work; generally mental distress (especially when producing loss of sleep), loss of relatives, pecuniary troubles, misconduct of husband or children, etc. In a smaller number, hard work, lifting heavy weights, frequent pregnancies and prolonged lactation (though these rarely produce

cancer without some trouble as well), long illness (especially, I think, if with paralysis), insanity. Very commonly we see several of these conjoined.

One form of breast-cancer, that which follows Paget's disease of the nipple, has been shown by Mr. Butlin and Dr. Thin to result from proliferating epithelium in the lactiferous ducts; and to be characterized by a deposit of this columnar epithelium. It thus is brought on by long-continued mechanical irritation, and is so far precisely analogous to epithelioma in other sites. We find a few cases of breast-cancer induced by nipple irritation without the intervention of Paget's disease; and it is possible that the pressure of ill-fitting stays, or some bad habit connected with the nipple, will explain occasional instances of obscure origin.

When both breasts become cancerous, the one is affected long after the other; implication takes place through the medium of the skin or lymphatics. It is noteworthy that the second breast presents only an ill-defined thickening of the whole glandular tissue, by no means so hard or so circumscribed as the original tumour; and which, *per se*, would hardly be taken for cancer at all.

An early *diagnosis* is, of course, most important; it deserves comment that although women commonly rush to the doctor with any harmless adenoid tumour, or with pains in the breast, hypochondriacal or hysterical; yet, in ninety-nine cases out of a hundred, they treat a cancer as a matter of no consequence, and delay seeking advice till the

disease has made considerable progress, and glandular infection has commenced. Probably one reason for this (which every medical man must have noticed) is the painless character of scirrhus, when it first appears; and for a long time afterwards. Another is, frequent pre-occupation of the mind by some care or trouble; but most likely there is an instinct which tells them the real character of the disease, and fills them with a nervous dread of learning the worst.

A practical general rule (to which I have found comparatively few exceptions) is, that every tumour making its appearance in the breast after forty years of age, must be regarded as malignant, unless there is strong evidence to the contrary. That any one found within two or three years before this must be viewed with strong suspicion; and if not at once removed (which would probably be the best plan, supposing that the patient would consent),—at any rate kept under frequent observation.

Added to considerations of age and of history, the stony hardness of a SCIRRHUS tumour is what we have most to rely upon in our diagnosis; it seldom fails to be manifest at some one spot, if nowhere else. Occasionally, however, such a growth, commencing exactly in the centre of a large mammary gland, is so enveloped in soft tissues, as not to show this feature till far advanced; the age of the patient, and an account of previous mental distress, or of similar debilitating cause, will be our chief guides. Added to these, if the disease is

scirrhus, the patient will tell us of sudden darts of pain through the breast, felt at long intervals—a very characteristic feature; though it does not do to rely on subjective symptoms without corroboration. Then the peculiar contractility of scirrhus must be borne in mind; nipple retraction, of course, takes place only when the fibrous tissue around the lactiferous ducts is implicated, hence is often wanting in the early stages (it may be congenital, and may occur when cancer is absent); but the slightest puckering of the skin over the tumour is absolutely pathognomonic, so far as I have seen. The latter is not usually painful on pressure, though it aches a good deal after being handled. When there is enlargement and tenderness of the axillary glands, combined with the aforesaid characteristics, we have no longer room for doubt. But it is well to compare the axillary glands on both sides (they are normally larger in some women than in others); and also to remember that suppuration, or, indeed, any inflammatory condition of the breast, will similarly affect these for the time being; as it may counterfeit adhesion of the skin to the tumour.

The common ADENOID OR CHRONIC MAMMARY tumour, which we are most frequently called on to distinguish from scirrhus, generally arises in young girls under thirty, and nearer seventeen or eighteen than thirty; presents itself sometimes as a little rather hard kernel, like a large pea, superficial, distinct, and freely movable; sometimes as an ill-defined thickening of the normal gland-tissue. It

is often associated with a nervous hysterical temperament (frequently aggravated, I have noticed, by immoderate tea-drinking), causes much pain at the menstrual periods, and is sometimes very tender on pressure ; there is often some uterine derangement, or imperfect development. But we do not find the sudden and severe darts of neuralgic pain, and the long intervals of complete immunity from all uneasiness, so peculiar to scirrhus. The latter's stony hardness is altogether wanting ; and with it, I need hardly add, retraction of the nipple, puckering of the skin, or any tendency to implicate the axillary glands. Cysts are by no means so commonly associated with this tumour (at any rate in young subjects), as some descriptions of it would lead us to expect. I am inclined to believe, however, that they will often develop in course of years, should the tumour remain unmolested.

ABSCCESS OF THE BREAST, if occurring during lactation, is readily diagnosed. It may, however, appear, when there is no question of pregnancy, or of lactation ; and if chronic, may give rise to some difficulty, till redness and fluctuation are found at one point or more. Enlargement of the axillary glands, as has been said, here helps to obscure the diagnosis. A peculiarity which (in addition to absence of the scirrhus characteristics above described) may, in some instances, serve to afford a correct diagnosis, is that we not uncommonly find different lobes of the breast indurated and hypertrophied, so that we seem to have several distinct

tumours freely movable in the substance of the breast, a condition never seen in malignant disease. Small superficial cysts may suppurate in the case of carcinoma; but that disease will then be generally too far advanced for them to mislead us.

Supposing any tumour, of doubtful nature, to make its appearance during lactation, the child should, of course, at once be weaned, and the breast re-examined after the lapse of a month or six weeks. Even then, a mass of inspissated milk may feel quite as hard to the touch as scirrhus; and, without great care, may give rise to error.

SARCOMA and ENCEPHALOID cancer commonly arise as small movable tumours under the skin, somewhere towards the circumference of the breast. In the early stages of encephaloid there may be very marked fluctuation; and the growth will hardly be distinguishable from a simple cyst till the axillary glands are implicated, a result which follows very speedily. Sarcoma often attains a large size before these last become visibly affected. Otherwise these forms of cancer appear to follow the same lines, generally speaking, as scirrhus; to originate from similar causes, and at the same age. Hence the period of life which the patient has reached, and her previous history, should always put us on our guard.

There is a peculiar condition in many cases of breast-scirrhus to which I have elsewhere directed attention ("Lancet," June 12th, 1880), and which I do not think had been previously described. I may

be permitted to refer to it here ; although, as it does not commonly appear till the axillary glands are enlarged, I cannot say that it affords material help in diagnosis. This is a tenderness on pressure, often combined with perceptible enlargement, in the head and neck of the humerus on the side which corresponds to the disease ; it extends down the bone usually for about a third of its length ; but there may be tenderness, without enlargement, all the way down. This symptom long precedes that cedema of the whole limb with which we are familiar ; it is only occasionally present ; may disappear (both enlargement and tenderness) after operation, and even during the natural progress of the disease ; is not noticed by the patient, though we frequently have complaints of pain shooting down the affected member ; and becomes apparent only on manual pressure and careful comparison of the two sides. It would seem to be the first manifestation of that implication of the osseous system which becomes so painfully evident in many cases of advanced scirrhus—the agonising lumbar pain, and aching of the limbs—and appears due to irritative inflammation of the periosteum, probably following changes in the marrow.

A certain puffiness and prominence above the clavicle, in the posterior triangle of the neck, often precedes enlargement of the cervical glands ; which can hardly be dealt with by operation. The disease, however, is not by any means so virulent here as in the axillary glands ; the former never suppu-

rate, much less fungate, as do the latter; they attain a certain degree of enlargement (say that of a hazel-nut), then become of stony hardness, but otherwise remain stationary, while the disease progresses within the thorax or elsewhere.

In one instance I have seen Paget's disease of the nipple simulated by syphilitic serpiginous ulceration. The latter was not entirely confined to the areola; did not present the red strawberry-like granulations of the former complaint; and readily yielded to the application of iodoform ointment.

I have seen two cases of *Colloid* in the female breast (both in the practice of Dr. Marsden); in each instance the patient was past middle age. The tumour had existed ten or more years, with no apparent increase for the greater part of that time; in each it was of more uniform and more marked hardness even than scirrhus, and to the touch gave exactly the sensation of *a large, smooth, rounded pebble embedded in the breast*.

TREATMENT.—Early diagnosis and free removal of the entire breast alone afford a prospect of future immunity. The incision should always be prolonged into the axilla, and the contents of this scooped out with the fingers as completely as possible, whether the lymph-glands are perceptibly enlarged or not. It is noticeable that there is always much more extensive implication of these than is discernible by the touch before incision of the skin; so that one very slightly swollen gland, felt before operation, is sure to indicate the presence of several

others in the like condition. And when none at all can be felt, it is best to 'get ahead of the disease.'

If the tissues are forcibly torn out, and the knife not resorted to, there will be little or no hæmorrhage; the only difficulty occurs in spare subjects, when the axilla contains no fat, and we have only tough fascia to deal with. It may then become necessary sometimes to place catgut ligatures deeply on torn portions of the latter, and to cut externally to these. Not unfrequently a chain of indurated glands, like little hard pins' heads, will be found running under the pectoralis muscle towards the clavicle; these are of great importance as regards the chances of future recurrence, and should be carefully scraped away successively with the fingernail, as high as the clavicle, which we can easily reach. It has been recommended to divide the whole muscular tissue in this situation; but this adds materially to the gravity of the operation, and a sufficient clearance can nearly always be effected without. We may remark that, when the skin has been divided, induration affords as important a guide to the presence of malignant deposit (besides being a clue to the position of the glands), as enlargement does before operation.

Again, it is important to take away plenty of skin. I have lately seen a case (No. 5, Appendix B) in which, after removal of one breast, and a complete scooping out of the axillary contents two and a half years previously, infection of the opposite breast had taken place through a chain of

nodules in the skin, stretching across the back ; the original site, and the skin over the sternum, remaining healthy. It is, indeed, a question whether the old method of searing off the breast with a red-hot knife was not really better in the end for the patient than the too parsimonious operations to which we are at present prone,—with our scrupulous endeavours to procure healing by first intention. If, subsequently to extirpation, nodules recur in the skin or under the cicatrix, the surgeon should, I think, generally blame himself for over-caution or timidity ; and should endeavour to remedy the mischief as soon as possible.

It makes little difference which incision, upper or lower, is made first ; but one apex of the oval should be a little prolonged beyond the lowest point of insertion of the pectoralis major to the axilla ; so that the skin there may be separated and the contents scooped out, without necessity for a second use of the knife. The arm should be held down by the side during the removal of the breast ; subsequently, while the axilla is being cleared out, should be held above the head at right angles to the shoulder. This rule is important ; the first position enables us to see where our incisions fall in the natural situation of the parts ; the second renders more prominent the intra-axillary tissues, and, besides, gives more room. It is most convenient to remove the breast first, then to ligature all the bleeding points (torsion is very unsatisfactory, at least, if the Listerian method is followed, as it gives

rise subsequently to most profuse serous oozing); last of all, to remove the axillary contents at our leisure. Wherever possible, it is best to carry out Lister's plan in all its details; but if that is impracticable, and if we are also forced to take into consideration the expense of his dressings, "anti-septic marine lint" makes a very efficient and cheap substitute for the latter, soaking up all the discharges like a sponge, and at the same time keeping the wound thoroughly aseptic.

Should we be unable to repress hæmorrhage from the deep parts (though I have not seen such a contingency), Mr. Furneaux Jordan's recommendation *temporarily* to leave one or more sponges in the wound may be acted upon; and with this may advantageously be conjoined an india-rubber bandage around the body. Lastly, all hurry is greatly to be deprecated, and the most scrupulous care taken that not a single gland (infected or likely to be so), which can possibly be removed, should be left. When the wound has healed, the patient must be directed to keep her upper arm to the side, to abstain from raising the hand to her head, and from all similar movements of wide extension. Bandaging the arm to the side is hardly necessary; and is very irksome. I have long abandoned the practice of syringing out wounds, which always greatly increases any suppurative tendency; it is far better only to squeeze out the discharge very thoroughly. Any adhering scabs must be carefully nursed, and not allowed to be rubbed off by the

dress. Locally, the part must be kept cool, and no stays, etc., permitted to press on it. Lastly, the utmost attainable tranquillity of mind is to be strenuously inculcated.

The patient should visit her doctor at gradually-increasing intervals, and the slightest enlargement of glands, or the smallest nodule in skin or under cicatrix, be the signal for a fresh operation. Even if this be declined, her condition is much better than it would have been without the original measure. Setting aside the more or less prolonged immunity, we find comparatively slight ulceration to set against those foul sloughing sores which are so agonisingly painful, and whose fœtor adds so much to the general distress seen when the disease has been suffered to take its natural course.

Palliative Treatment.—Before ulceration takes place, strong *lead* lotion (℥j. to Oj.), applied three times a day, affords much relief, and counteracts inflammatory tendencies; with occasionally a bag of *ice* or *cold bread and milk poultice*. An embrocation of *belladonna* and *aconite* liniments, in equal parts, ranks next in usefulness. The part must be kept as cool as possible; and the use of gutta-percha tissue over lint altogether deprecated.

After ulceration (when this is slight) the cold bread poultice and iodoform ointment are soothing applications; but now our principal efforts often have to be directed towards neutralizing the abominable fœtor. *Chloralum* lotion (in the proportion of 1 to 3 or 4) does this efficiently; and at the same time often

greatly relieves the pain; a property in which most antiseptic and deodorant lotions are, unfortunately, deficient. Sanitas, terebene, and hyposulphite of soda may be mentioned as occasionally useful; carbolic and sulphurous acids are, unfortunately, very volatile, and require frequent renewal. The "antiseptic marine lint" is a convenient vehicle for any of these.

The lotion I find most generally useful, and most comforting to the patient, is composed of *menthol* (1 part to 3 or more of olive oil); it benumbs sensibility, and is thoroughly deodorant. In foul gangrenous sores it cleanses the ulcer remarkably; so, also, does *pepsine*, in the proportion of fifteen grains to an ounce of water, with a few drops of dilute hydrochloric acid,—only that the latter is too expensive for frequent use. These applications should preclude the erysipelas to which chronic malignant ulcers are especially liable, and which is apt to prove so mischievous in hospitals or infirmaries.

When there is repeated hæmorrhage from numerous small bleeding points in a shallow chronic ulcer, *iron lint* (lint soaked in liquor ferri perchloridi fortior, and then dried) will be found very efficient; small points being placed by the finger on the affected spots, and there left adherent, till subsequently removed by the discharge, or with the aid of a poultice.

Any prominent mass of fungous granulations had better be taken off with the galvanic écraseur,

should the general health permit; after such treatment the resulting ulcer excavates and does not fungate, a circumstance greatly contributing to the patient's comfort. Very little can, unfortunately, be done to palliate the enormous swelling of the arm (due to obstruction of the lymph-channels); but I believe that clearing out the contents of the axilla, as above recommended, is the best prophylactic; and that no such condition, in any degree, ought to be met with after an operation has once been performed.

Internally, opium and morphia, with or without belladonna, are, of course, our sheet anchor, and, with rest, the utmost procurable tranquillity of body and mind, carriage exercise in the open air, and easily-digested food, will do much to prolong life, and to promote euthanasia.

CHAPTER VII.

UTERINE CARCINOMA AND EPITHELIOMA.

WE have here to consider cancer in perhaps its most distressing and most loathsome guise. The commencement is always more or less insidious ; and when we remember the periodical perturbations to which the circulatory and nervous structures of the part are normally liable, we can hardly wonder at the prevalence of malignant disease in this site ; at its liability to be confounded, at first, with natural processes ; or at its apparently close connection with conditions of the nervous system. A life of hard work, of occasional privation, of too frequent child-bearing and prolonged lactation, greatly predisposes ; so also with chronic ulceration and menorrhagia from whatever cause—intemperance not an infrequent one. Several of those patients from whom the previous statistics were taken, proved, after admission into hospital, to be insane—a conjuncture probably amounting to more than a mere coincidence. Carcinoma often follows a neglected parturition ; and though, from its situation, the

organ can hardly suffer injury in ordinary accidents, such as falls, we occasionally find these precede, and probably induce malignant disease indirectly, through shock and nervous depression. Mental trouble is found to be a more constant antecedent than any other single cause; and, I think, of this, than of cancer in any other situation. It is a common forerunner, even in cases of cauliflower excrescence; may, perhaps, then be considered rather a predisposing than an exciting cause. I may mention (as pointing out its diagnostic value, and how one learns to expect it in these cases), that several times I have been at first considerably puzzled when a patient has appeared with supposed uterine cancer; yet without any previous worry, trouble, or hard work. An examination has solved the mystery; showing the rectum to be the seat of disease.

Diagnosis.—In hospital patients, uterine cancer rarely comes under observation till it is far advanced; there is often no pain at first, and what exists has probably been too often felt before, to occasion much attention; the same may be said of hæmorrhage and of other discharge (till this becomes offensive). In family practice, great attention should be paid to any uterine symptom (such as pain in the back, or repeated hæmorrhages) occurring in women of mature years, especially after mental trouble, or any other obvious cause of nerve-prostration. Unfortunately, we here find cancer not infrequently occurs at a much earlier age than

breast-cancer; and there is no fairly precise average limit, as in the latter, to put us on our guard.

From *simple ulceration*, the presence of irregular induration, and of hard nodules or nodular portions of tissue around the os uteri, usually serve for diagnosis; and the only condition which can simulate these is the cicatricial contraction consequent on severe laceration of the cervix in difficult labours. Here absence of pain, of impaired general health, of previous mental distress, of lividity of the mucous membrane, as seen through the speculum, will generally guide to a safe conclusion; there will be no offensive discharge, no hæmorrhage, and should there be ulceration, this will not bleed, when touched, nearly so readily as a malignant ulcer.

When the *fundus* becomes the seat of malignant disease, very severe pain (chiefly referred to the same locality, but also present to a less degree in the back and thighs) is a most prominent and (so far as we can judge in such an obscure spot) early symptom. With it we find occasional hæmorrhages, and sooner or later, a fœtid discharge. There is often retroversion, or retroflexion; the enlarged fundus becomes fixed in its abnormal position, and reduction cannot be effected. Without this, the hypertrophied fundus can readily be distinguished by conjoined vaginal and abdominal manipulations. Should the sound be resorted to (though that can hardly be advised), there will, of course, be great pain, some hæmorrhage; an enlargement of the

uterine cavity will be found in most instances. So far as I have seen, the patients are always advanced in life; and, as I have said before, are often single.

There is a class of cases, of not very infrequent occurrence, in which a malignant (apparently encephaloid) growth commences within the cervix; the os being healthy. We find a margin of normal tissue just within the os uteri (in the early stages); the finger feels a prominent rounded boss, rather soft, bleeding readily when touched. There is no pain till the disease is far advanced; but repeated attacks of hæmorrhage (which may indeed be continuous) rapidly undermine the constitution; and when that is not present, a "watery" discharge takes its place. The absence of any induration (such as we are accustomed to associate with most malignant tumours) is here apt to lull the medical attendant into a false security, till the intractable hæmorrhage forces on him a conviction of the real state of the matter (see No. 10, Appendix B).

Precisely analogous in progress and early symptoms to the foregoing, though much more easy to diagnose, is the old-fashioned *cauliflower excrescence* (epithelioma), wherein we find a soft, spongy, papillomatous mass springing from the margin of the os uteri, and protruding into the vagina. Hæmorrhage, more or less continuous, profuse watery (not sanious or offensive) discharge, and entire absence of pain, also characterize this for some time after its commencement.

It is to be remarked that later on an ulcerative process may remove the prominent tumours in both the two latter classes, and we then find a deep excavation, infiltration of the surrounding parts, and profuse foetid discharge, exactly as in the common form of uterine carcinoma (scirrhus).

Treatment.—Granted a long cervix, and disease limited to the margin of the os uteri, extirpation of the cervix with the galvanic cautery will naturally be resorted to. With two duck-billed specula, it is easy to pass the wire loop around the cervix; but otherwise this is very difficult. There is no fear of secondary hæmorrhage if the wire is not pulled through the tissues too rapidly. It cannot be expected,—viewing the nature of the disease, its presence in soft and vascular tissues, the usual weakness of the patient, her prior exposure to debilitating influences, and the gravity of such operations,—that extirpation of the entire organ will ever take its place as a legitimate and common expedient in the treatment of uterine cancer.

But supposing a short cervix, and yet a limited amount of disease; then the free application of *potassa fusa* will remove much more tissue than the cautery,—and that more safely. The cautery is very superficial in its action, and leaves no deep slough behind it. With *potassa fusa* the reverse is the case; this last has one great advantage over chloride of zinc, or similar caustics, that, by the subsequent injection of cold water, we are enabled to stop at once all further action on the tissues, and with that

all pain; whereas chloride of zinc is much more superficial and slow in action, and causes severe pain for a long time afterwards.

In applying potassa fusa, the patient should be etherized, and placed in the lithotomy position, the vagina distended by means of two duck-billed specula, and small pieces of sponge pushed well below and against the sides of the cervix. The cylinders of caustic potash, tied with thread wound around the whole length of the piece—(otherwise portions quickly break off)—to a thin stick, are held against the diseased mass, and well rubbed about the whole margin of the os. It is well to have several such sticks mounted with the salt in readiness. Then, when the application is finished, water should be freely injected before the sponges are removed. The sitting must by no means be hurried, and several will probably be required.

With cauliflower excrescence (when more cannot be attempted), I have found repeated applications of solid *perchloride of iron*, at intervals of a week, contribute much to allay the progress of the disease (see cases in "British Medical Journal," May 21st, 1881, also No. 15, Appendix B). The salt seems to 'mummify' the soft, vascular tissue. The fingers must be well oiled; about two pieces of the perchloride, the size of hazel-nuts, should be pushed up as nearly in contact with the growth as possible, and then a large pledget of cotton-wool, thoroughly soaked in oil, passed well into the vagina. After twenty-four hours the cotton-wool should be removed,

and the vagina syringed out with dilute Condyl's fluid. Occasionally, but not always, there is subsequent pain, which will be combated by morphia; the patient must, of course, lie in bed for a day after each application.

After any operation or caustic application, passive exercise in the open air is most beneficial; but the greatest care must be taken to prevent any jolting. The lower part of the spine is exceedingly sensitive in these cases; any shaking or jarring motion is apt to excite vomiting, and to depress the patient for days afterwards, if not permanently.

Palliative Treatment.—Rest and morphia have a more marked effect in improving the general health here than, I think, in cancer of any other locality. Belladonna will be advantageously combined with them. Of local measures, chloralum (1 to 3 parts of water) is, perhaps, the most generally useful injection, being disinfectant, astringent, and, apparently, also sedative. Menthol dissolved in olive oil (1 to 4) is highly to be recommended. Nitrate of silver lotion (20 grains to the ounce) occasionally gives great relief to pain; injections of terebene, sanitas, chloride of zinc, or carbolic acid may sometimes be resorted to. A warm hip-bath is often very soothing to the patients; and most of these like a plaster on the loins, whether of belladonna or of aconite (made on a similar formula to that given in the "Pharmacopœia" for the first-named). The *vomiting*, which proves so distressing towards the end, is best combated

by small repeated doses of chloral, or by the subcutaneous injection of morphia, with ice and barley-water as auxiliaries. When there is a tendency to *hæmorrhage*, injection of Dr. Bond's fer-ralum (15 grains to the ounce of water) may obviate the necessity for plugging—it is, of course, also deodorant—or of liq. ferri perchloridi (1 ounce to a pint of water); or of alum and sulphate of zinc (10 grains of the former and 5 of the latter to the ounce).

The use of Mr. Gamgee's absorbent pads greatly promotes the patient's comfort; only the poor sufferers themselves can comprehend how much depends on small matters. When the parts about the meatus urinarius and the neck of the bladder are infiltrated, constant pain in that situation, aggravated by micturition, and associated with vesical irritability, becomes a prominent feature. In this, and in a similar infiltration of the rectal wall, suppositories are very useful, though otherwise they do not seem so efficient as morphia administered by the mouth.

CHAPTER VIII.

EPITHELIOMA OF THE TONGUE

Is always referable (as has been said) to some mechanical irritation, generally of a projecting stump or tooth; sometimes of a heated pipe-stem, in the act of smoking. Not seldom, epithelioma begins on the floor of the mouth, gums, or palatine arches, the tongue being only secondarily involved; then, probably, some crack or aphthous ulcer, kept open by the motion of the parts, forms the starting point. Age appears the principal predisposing cause, by inducing a lowered vitality, and a consequent reluctance in any breach of surface, to heal. As we have seen, there is a progressive frequency with each advancing decade,—not an abatement in extreme old age, as in the case of other forms. Any condition which tended to lower vitality, might, of course, be expected to have a similar indirect influence on the causation of epithelioma. Indications of heredity are absolutely *nil*.

But one of the most prominent predisposing

causes of lingual epithelioma (it almost amounts also to an exciting ditto in many instances) is syphilis, a disease which often passes into epithelial cancer, and, on the other hand, often only simulates it; so that the most diligent circumspection is required to prevent a mistake in diagnosis on either side.

The *purely syphilitic* tongue is characterized by its wrinkled and shrivelled appearance; the whole organ is more or less denuded of epithelium, presents a mottled whitish appearance, and often looks small and pointed. We commonly find several little shallow ulcers scattered about its dorsum, with intervening ridges of tissue, comparatively elevated, and more or less denuded of epithelium. There may be sessile whitish warty growths, of irregular shape, with fringed and ragged edges, usually multiple. The adjoining mucous membrane of the lips and cheeks presents (a very typical feature) numerous patches of faintly-white discoloration, alternating irregularly with tracts of healthy epithelium,—the former appearance being due to shallow ulceration (or at least denudation of epithelium), and subsequent cicatrization. There will probably be a similar appearance on the soft palate, and about the fauces. We may find (but not very frequently) the so-called ichthyosis.

If a gumma is formed and breaks down, there will be no appreciable induration around the ulcer, and the rest of the tongue does not put on a glassy oedema. The lymphatic glands under the jaw

(including the sub-maxillary) will be found slightly enlarged—as they may do in ordinary tertiary syphilis. They will remain, however, small, very hard, and permanently hypertrophied, and will not progress to suppuration. There will be no noticeable prominence under the sterno-mastoid. Syphilitic ulcers are characteristically painless; and the breath is not foetid with the peculiar odour of cancer.

In *epithelioma not arising from syphilis*, we find at first an ulcer situated opposite to some source of irritation, as a projecting tooth. If very small, it will probably look healthy enough, and there will be nothing remarkable in its appearance; by degrees, the margins become indurated; and, very soon, lancinating pain is complained of. Later on, the remainder of the organ becomes glassy and swollen. After ulceration has progressed much, there is a characteristic foetor of the breath. Enlargement of the corresponding sub-maxillary gland, and of the lymphatic glands near this, appears very early; these, however, do not become usually so hard as in syphilis, increase rapidly in size, ultimately suppurate and discharge a thin ichor from one or more sinuses; may then form an open ulcer with deeply-excavated centre, with the characteristic raised and highly-everted edges. At an early period, also, the lymph-glands under the upper part of the sterno mastoid, on the same side, become affected, and may yield a noticeable fulness in that situation. Unless syphilis be present, we shall not

find the typical white staining of mucous membrane on tongue, lips, and cheeks, so characteristic of that disease.

The most difficult cases to determine are those in which *syphilis results in epithelioma*. One of the ulcers, above described, deepens, spreads, and becomes indurated around its margins; darting burning pain begins to be felt; glassy cedema of the surrounding parts of the tongue, with foetid breath and progressive enlargement of glands, is soon seen.

But more commonly, when the patient is advanced in life, and evidences of syphilis have lasted many years, an ill-defined tumour, deep in the substance of the tongue, makes its appearance far back towards the root; rapidly enlarges, ulcerates, and the ulcer presents a characteristically irregular, malignant appearance. This form is most insidious; the patient being so accustomed to disease in the organ, does not pay much heed to the new growth till far advanced. And unfortunately enlargement of glands (especially of those situated deeply under the sterno-mastoid), sets in quite early.

A very characteristic feature in the progress of lingual epithelioma, and one which will occasionally serve to distinguish it from syphilis, is the little white islands of epithelium which arise on the soft palate, and on different spots in the cheeks and roof of the mouth, with which the diseased part may from time to time come in contact. It is an

auto-inoculation, precisely similar to that described by Dr. Foulis in some cases of malignant ovarian disease ; detached epithelium cells, or their nuclei, from the diseased spot, becoming attached to sites formerly healthy, there proliferating, invading the submucous tissues, ulcerating, and setting up new foci of disease. The epithelial cells from the cancer seem to have acquired new and virulent infective properties, which were wanting in their originals ; and the whole process lends another support to the theory of "Automatic Life," put forward by Dr. Creighton at the last meeting of the British Medical Association.

No local form of cancer more rapidly invades the lymphatic glands than that we are now considering ; whence we may infer that the usually slow progress of the disease elsewhere, is due rather to anatomical considerations, than to the intrinsic nature of the latter. The following case will serve to show the extreme malignancy of tongue-cancer ; the paramount necessity for a prompt diagnosis and bold treatment :—

Thomas K., aged 49 ; married ; admitted into the Cancer Hospital, August 18, 1879. History of syphilis, followed by skin-eruption, twenty years before. Had bitten his tongue two and a half years previously ; the place had ever since remained sore, being irritated by sharp teeth. The latter had been extracted ten weeks before admission, with no beneficial result.

When admitted, on the right side of the tongue, about an inch from the tip, was a small, roundish, healthy-looking ulcer, about half as large as a threepenny piece ; the edges were slightly everted, but not hard ; there was

no surrounding infiltration, and no glandular affection; the mucous membrane of both mouth and tongue quite healthy. After a fortnight's treatment, locally with iodoform, generally with iodide of potassium and bichloride of mercury,—no improvement resulting,—a slice of tissue, extending widely beyond the margins of the ulcer (but not reaching the septum), was excised with Paquelin's thermo-cautery. The man left in September, apparently cured.

On June 12th, 1880, he re-appeared with a cluster of enlarged glands under the right angle of the jaw, adhering to the bone; under the right sterno-mastoid was another, as large as a filbert. The common carotid artery being first tied as a measure of precaution against hæmorrhage, the whole of the above were removed. One lay close upon the internal jugular vein, and had to be carefully peeled off this; there was considerable venous bleeding, and several veins had to be ligatured. Discharged well on June 30th, 1880.

In October of the same year the man was re-admitted with a gland as large as a walnut, under the right sterno-mastoid, at about its middle. Upon incision a mass of white, crumbling material was found in a sort of capsule, extending, along the inner border of the internal jugular vein, deeply into the tissues of the neck. As much as possible was scooped out, but the whole could not be removed. The man subsequently attended for a short time as an out-patient, but then became too weak to come up, and was lost sight of. *His tongue remained healthy till the end.*

This case serves rather as an example of what to avoid. A correct conclusion should have been arrived at without delay, from the history of the patient, and from the perfectly healthy character of the buccal and lingual mucous membranes—although, indeed, viewing the time the patient had

been affected before he came to the hospital, it may be doubted whether gland-infection had not then already taken place. Scraping the ulcer, and viewing the cells under the microscope, as recommended by Mr. Butlin, might have served to confirm the diagnosis; but it is rare that we cannot form a correct opinion without this, and we could hardly venture ever to rely solely upon it.

The fortnight's antisiphilitic treatment was a deplorable waste of time, (the minute size, and remarkably healthy appearance of the sore may form some slight excuse); and should hardly ever be resorted to, unless one has a strong bias in favour of syphilis, *pur et simple*, as the sole mischief. *Such is the rapid advance of epithelioma here, that almost a day's delay in having recourse to surgical measures is to be deprecated;* it is greatly to be feared that too many valuable lives are sacrificed by hesitation, and by the supposed necessity (before one dares to suggest such an alarming operation as excision of the tongue) of preliminary dosing with iodide of potassium—which is often prolonged for a month or more! So far as my opportunities for observation have yet extended, the surgeon's rule, in any case of doubt (unless the probability be very strong that we are dealing with syphilis, and nothing more), should be (1) supposing a small ulcer, hardly more than an excoriation, to excise this at once with the thermo-cautery, cutting very widely beyond it; (2) if a large ulcer, or a deep-seated suspicious tumour, to

extirpate the whole organ, and to look well to the adjacent glands.

It should always be borne in mind that in any excoriation or superficial ulceration occurring in a patient of mature age, a history of chronic irritation, combined with a healthy condition of the rest of the buccal and lingual mucous membranes—especially provided that the sore remain unchanged after the cause of irritation has been removed—will hardly leave any opening for doubt as to commencing malignancy. Considerations of site are of little or no use as guides.

Prophylaxis and Treatment.—Attention to any slight excoriation or crack at its first commencement, the early removal of any tooth or stump with a sharp projecting edge, against which the tongue is felt to be frequently rubbed, are obvious preventive measures, which, if carried out universally, would almost preclude the existence of this fatal disease. In syphilitic patients, of course, tongue lesions should never be neglected.

When epithelioma is once established, prompt extirpation of the whole organ is generally necessary, and is the most safe course; though with exceptionally small ulcers, such as that in the case cited above, the removal of a considerable slice of tissue may suffice, and may be tried first before resorting to the extreme measure. It has been stated that the septum limits the disease, for some time at least, to one side of the tongue; and so splitting up the organ longitudinally, and

removing only the lateral half, has been advocated. The usual result of such a procedure, so far as I have seen, has been that long before the wound has healed malignant granulations sprout therefrom.

Free division of the frænum with scissors, dragging forwards the tongue by a loop of silk twine passed through its tip, and its removal by the wire of the galvanic *écraseur* passed around the root, would appear the most satisfactory method we can adopt for extirpation, out of the large number proposed. The galvanic wire has the advantage over knife or scissors of leaving a slough behind, and so of removing more than it embraces at the time. It is unfortunately rather apt to slip at first, before it penetrates into the tissues—almost its only drawback. Curved needles passed completely through the diseased part will sometimes be required as guides, especially when the latter extends very far back. Secondary hæmorrhage afterwards is very rare; should it occur, it will be readily controlled by the application of iron-lint, combined with digital pressure on the carotid. Of course, the patient should be rigidly confined to bed, and fed with soft, pulpy food till the sloughs have entirely separated.

So far as regards subsequent recurrence, the glands under the jaw are our worst foes, and are by no means easy to deal with. One visible is nearly always the key to a chain of invisible ones stretching deeply behind it. When operating under the angle

of the jaw, we work in a deep cavity, whose recesses cannot be brought completely into view. There is always much venous hæmorrhage ; in one case of mine, so profuse and uncontrollable was the arterial bleeding, that the common carotid had to be cut down on and tied before the operation was completed. And in dealing with any advanced case, where the affected glands are numerous and deep-seated, this measure is to be recommended as a preliminary ; so far as I have seen, it has no bad effect whatever on the patient for the time being ; and besides, might be reasonably expected in some measure to retard the progress of the cancer, should that return, or should it be found impossible thoroughly to extirpate its deposits. When the original ulcer was far back on the tongue, the glands under the upper part of the sterno-mastoid must also be well looked to.

At the slightest appearance of tenderness on pressure, or of enlargement, the aforesaid glands should be cut down on and removed ; and it is to be borne in mind that the operation is far easier in early stages, when they will readily peel out, than later on, when the abundant fibrous tissue here surrounding them becomes much harder and tougher, and when they become matted to the bone and to one another.

But with all our efforts in this direction, it must be confessed, that when once the glands are touched, all is very uphill work ; and, indeed, a forlorn hope. Hence my earnest plea, as above, for very early operation.

Palliative Treatment.—In all cases, when the patient has still sufficient strength left, excision of as much as possible of the diseased organ is to be recommended, merely as a palliative. Compare the latter days of those poor sufferers whose mouth is filled with a loathsome gangrenous mass, which prevents their taking nourishment, besides causing intolerable distress in other ways,—with the dying hours of those who still, it is true, succumb to a painful disease, but whose mouths have been cleared of the original growth, and are either quite healthy, or present only superficial ulceration on the floor; and we can have no doubt that an operation, regarded merely in this light, is an immeasurable gain to the patient.

Beyond this, the liberal administration of *morphia* affords, of course, great relief; and it has seemed to me that the favourable action of that drug is much enhanced (in the case of epithelioma generally), by combining it with tincture of *belladonna*; a measure which also contributes to obviate the resulting constipation. Gargles of *chloralum* (1 to 4) are most serviceable for local application. *Ice* occasionally relieves.

Again availing ourselves of the locally anæsthetic properties of peppermint, we may use *menthol*, suspended in sweetened mucilage.

CHAPTER IX.

EPITHELIOMA OF LIPS, FACE, VULVA, ETC.

THE usual exciting causes of epithelial cancer in these sites have been already detailed. A single blow may produce cancer of the lip (or rather predispose to it) by means of a cut which subsequently fails to heal. Syphilitic fissures at the angles of the mouth may result in the same; but as these are most frequently met with in patients comparatively young, syphilis far less often gives rise to cancer in this situation than when it affects the tongue. So syphilitic warts on the genital organs may terminate, like other warts, in cancer of those parts. Robust countrymen from the agricultural districts seem peculiarly liable to lip-epithelioma; at least, that is my impression.

There is no valid reason for separating (at least clinically) the rodent ulcer of Moore from ordinary epithelioma; the difference is one of degree, not of kind. Keloid is prone to take on, in the end, a malignant action. Closely akin to this (if not pathologically identical) is the condition styled by Tilbury Fox ("Atlas of Skin Diseases") Molluscum Fungoides, in which numerous soft fibromatous

growths appear about a scar, very slowly increase in size and number, and spread to the adjoining tissues; recur after extirpation; after many years ulcerate, infect the lymphatic glands, and ultimately prove fatal. Of this I have seen two cases in the practice of Dr. Marsden, whom I have to thank for permission to allude to them here. In one (the patient an elderly man), the head and back were nearly covered with soft, reddish tumours of irregularly rounded shape, more or less similar to that of an artichoke, in diameter from two inches downwards; some ulcerated on their summits, the ulcers having everted edges, and a characteristic epitheliomatous appearance. In the other (a young, very athletic subject), the abdomen was affected; the disease had arisen many years before, and had recurred several times after extirpation, without at all affecting the general health; besides the prominent *artichoke-like* tumours, ulcerated on their summits, there were numerous soft, doughy masses in the subcutaneous tissue. There was no family history of predisposition.

Treatment.—Epithelioma of the Lip demands, of course, an early and wide use of the knife; though the disease is here very much more chronic, and less “malignant” than in the tongue. The V incision is only suitable for ulcers of moderate dimensions; when the whole margin of the lip is fringed with warty growths, or when there is a deep and wide-spreading sore, it is wisest not to think of bringing the edges of the wound together subsequently. Any projecting teeth or stumps should of course be

removed. Arteries should be ligatured, and iron-lint applied over generally oozing surfaces; hare-lip pins may be used, but only by way of acupressure, to restrain hæmorrhage. It is surprising how little deformity remains after the removal even of the whole lower lip; and how what there is can usually be well concealed by a moustache.

The glands under the lower jaw must be watched, both before operation and afterwards; their removal is easy, if effected at the outset; very difficult if left till they become matted together and firmly fixed to the bone. The superficial glands are first affected; there is not the early implication of deep ones, as in tongue-cases.

For epithelial tumours on the FACE caustics find their most frequent employment; we have our choice mainly among arsenical mucilage, chloride of zinc paste, and potassa fusa. When there is a large, vascular, ulcerated surface, charcoal powder, saturated with strong sulphuric acid, forms a deep eschar, without hæmorrhage; and leaves a healthy granulating surface, which soon heals.

Epithelioma of the GENITAL ORGANS is best dealt with by the galvanic éraseur. As has been often remarked before, we occasionally meet here with a noticeable divergence from rule. Even in apparently far-advanced cases enlarged glands in the groins may, after excision of the diseased mass, remain stationary, or may even recur to their normal size. Such an occurrence, however, is exceptional, and by no means to be looked for in the majority of instances.

APPENDIX A.

BRIEF REPORT OF ALL THE CASES OF BREAST-CARCINOMA IN THE CANCER HOSPITAL ON AUGUST 24TH, 1883; SHOWING THEIR CAUSATION.

CASE 1. *Recurrent scirrhus of right breast.*—Elizabeth T., aged 46; married; three children. No family history of cancer; no injury. Has had much mental trouble for past three years; about six months before appearance of tumour had great anxiety and loss of sleep at night, owing to misfortune of relative. The breast was excised, two and a half years ago, at St. Bartholomew's Hospital; disease recurred six months since; now extensive deposit in axillary glands, under and around the cicatrix, with numerous nodules in the skin.

CASE 2. *Scirrhus of left breast—duration two years.*—Ellen T., aged 60; married; seven children; straitened circumstances; much mental trouble and hard work preceding appearance of tumour—death of husband and daughter. No family history of cancer; no injury.

CASE 3. *Recurrent scirrhus of left breast—duration two years.*—Catherine L., aged 60; married; two children. No family history; no injury. Much mental trouble and worry for years; sister died five years ago. Has since undergone two operations.

CASE 4. *Scirrhus of right breast—duration sixteen months.*—Laura J., aged 27; single; governess. No cancerous family history; no injury. *At first strenuously denied the existence of any debilitating cause*, illness, hard work, mental depression, or the like. *After repeated questioning* it was elicited that her father had been dead several years; that her mother had sustained a great reverse of fortune, when she herself was forced to take a situation, as governess, at Brussels. She thinks she had been here about a year before she noticed the tumour. There are five sisters. The patient is of emaciated, delicate appearance.

CASE 5. *Scirrhus of left breast,—duration two years.*—Margaret P., aged 48; married; seven children. Mother died of uterine cancer at age of 62; no other relative thus affected. No injury. For past three or four years has had much mental trouble and anxiety; for six or eight months in particular, before the appearance of the tumour, “things went very badly.” Husband is alive; has lost four children, the last seven years ago.

CASE 6. *Scirrhus of right breast—duration eight*

months.—Emma B., aged 49 ; single. No family history ; no blow or injury. Schoolmistress. Has had more or less trouble for years ; had a carbuncle on the shoulder three years ago, and has not felt strong since. Has been much over-worked in school. Says that last June she felt almost out of her mind, and was ready to throw herself out of the window. Father was ill in bed for six months last year ; had much anxiety about him, and for several months at the beginning of 1883 pecuniary troubles. The tumour appeared about Christmas last.

CASE 7. *Scirrhus of left breast—four years' duration.*—Susan G., aged 43. Sister now very ill, with uterine cancer ; no other relative affected. Widow ; eight children ; husband died four years ago ; lost four children previously. Since then has worked very hard, but has had no special trouble, and no previous illness. Is very deaf ; of worn, rather emaciated appearance.

CASE 8. *Recurrent scirrhus of left breast—duration three or four years.*—Emma H., aged 46 ; widow ; no children. No family history of cancer ; no injury. Lost husband twenty years ago ; has ever since lived with her mother, and has had a "hard struggle for a living." Had money troubles just before appearance of tumour. Operation fifteen months ago ; about three months afterwards, was throwing clothes over a line, when she felt some-

thing snap. Small fissures appeared in the cicatrix, which would not heal; and have since progressed into malignant ulceration.

CASE 9. *Scirrhus of left breast—duration nine months.*—Mary B., aged 69; married; six children, all dead, the last twenty-two years ago. No family history of cancer. Husband alive. Keeps two lodging houses; has worked hard in them; attributes her disease to lifting heavy weights, and carrying pails of water, etc., upstairs. Has had no particular mental trouble.

CASE 10. *Scirrhus of left breast of five years' duration.*—Eliza S., aged 74; widow; no children. No family history of cancer; no injury. School-mistress for past eighteen years. In 1870 she lent a large sum of money, and had great difficulty in recovering it, with much worry and anxiety. About the same time had a difficulty with the School Board, who forbade her to have more than eleven pupils in her room, whereas, till then, she took eighteen or twenty. This materially reduced her income, and ever since she has been compelled partially to live on her capital. In 1870 this amounted to £240; has now become reduced to £60. An advanced state of disease.

CASE 11. *Scirrhus of left breast—duration six years.*—Susan P., aged 54; married; no children. Sister died of uterine cancer five years ago. No

injury. Has always worked hard. Just before the appearance of the tumour was nursing a patient, with whom she had a great deal of trouble, and much sitting up at night. No other trouble specified.

CASE 12. *Sarcoma of left breast—deposits in sternum, bones of scalp, etc.*—Jane W., aged 39; widow. Mother's mother had cancer in uncertain site. No injury. Husband died paralysed, two years ago; patient had nursed him through long illness. Subsequently worked very hard, canvassing, etc., to get her only child into a benevolent institution. Tumour of one and a half years' duration; large hard mass in left breast, connected with the ribs; several roundish similar growths from the sternum, several from the cranial bones, one on the right scapula.

APPENDIX B.

MISCELLANEOUS CASES ILLUSTRATING THE ORIGIN OF ALVEOLAR CANCER, AND OF SARCOMA.

CASE 1. *Abdominal sarcoma—history of trouble and privation.*—Mary F., aged 56; wife of a labourer. No family history of cancer, and no injury. Had suffered much anxiety for previous six months; husband had been out of work, and had suffered partial starvation in consequence. About four weeks before admission into hospital, the patient felt pain of a shooting character below the ribs on the right side; at the same time noticed a tumour in the epigastrium, and had a troublesome cough.

The patient was greatly emaciated; conjunctivæ rather yellow. In the epigastrium was a prominent elastic tumour, below which the margin of the liver could be felt nodulated; and the gall-bladder enlarged and hard. Hepatic dulness rose to third rib; posteriorly there was dulness over lower half of right lung, with impaired respiration. Spleen normal. Distended veins over thorax and abdo-

men ; not much pain. Death in three weeks ; post-mortem examination refused.

CASE 2. *Carcinoma uteri—mental trouble.*—Sophia C., aged 40 ; married ; two children, both dead. No family history, or ditto of injury. About six months before admission, fretted much about the death of a nephew ; had sleepless nights. Disease of four months' duration. Extensive ulceration and deep excavation of cervix uteri.

CASE 3. *Scirrhus of left breast—mental trouble—tumour aggravated by fall.*—Mrs. P. ; twice married ; wife of farmer in comfortable circumstances ; aged 43. Seen in September, 1882, and breast then removed, together with several enlarged axillary glands. No family history of cancer. Son enlisted in 1876, causing his mother long-continued trouble and anxiety. Tumour of two or three years' duration ; three months before operation, a fall had greatly aggravated the pain, and had caused rapid enlargement. The patient had led a comfortable, easy life in a healthy and retired country village.

CASE 4. *Recurrent scirrhus of the left breast—mental distress—spinal deposit.*—Mrs. B. (seen in November, 1881), aged 40, widow ; several children ; no family history. Had always much mental trouble. Original tumour appeared just after the death of a daughter ; it was removed at Guy's Hospital, but

recurred in two months. When seen, there was great emaciation ; small nodules in the skin around the cicatrix, a slight return in the latter, enlarged glands in the axilla and above the clavicle. Very little pain about the original site, but much weakness and pain in back, with loss of control over legs (but not absolute palsy) ; three spines about the sixth dorsal vertebra projected considerably.

CASE 5. *Scirrhus of left breast, after loss of relative—after two and a half years, implication of opposite breast by chain of nodules in skin, stretching across the back—multiple deposits in skin.*—Mrs. G., aged 40 ; wife of retired commissary, in comfortable circumstances, with no children. No family history of cancer ; no previous injury. A tall, robust-looking lady of cheerful disposition. The brother died after a short illness ; this preyed much on the patient's spirits ; the tumour appeared within a few weeks, but was not attended to for six months. The whole breast was then removed, and the whole contents of the axilla, including several glands as large as walnuts, with contents softened and breaking down. Enlargement and tenderness at the head of the left humerus, extending down about a third of the shaft, had been noticed before operation, though there was no complaint of the arm.

Six months after operation, the glands above the clavicle were found somewhat enlarged, about the size of a horse-bean, and very hard. They caused no uneasiness, however ; the general health was very

good, and the parts about the cicatrix showed no indication of return. The patient was not seen again for two years; she was then found to have numerous flattened, roundish, tubercles in the skin, scattered over almost the whole of the body; there was one on the inner side of the right thigh; some were three-fourths of an inch in diameter, of round or oval shape. A chain of these extended across the back from the neighbourhood of the old cicatrix (which was still healthy) to the left breast; the latter was enlarged, and presented the usual semi-elastic induration. Lancinating pain was felt in the skin-nodules; the general health was breaking down, and severe aching pains were continually complained of in the lumbar region, and in the limbs. There was no oedema of the arm; the left humerus remained as when first seen.

CASE 6. *Scirrhus of left breast from nipple irritation (without Paget's disease), combined with mental anxiety; speedy recurrence in liver, after operation.*—Mrs. A. A.; married; several children; very stout; general health good. No family history of cancer. Husband much embarrassed in business; became bankrupt shortly afterwards. Sixteen months previously, patient noticed (she said) both nipples become retracted; she pulled several times at the left, rather forcibly. Eight months afterwards, noticed some redness around this; slight discharge; a tumour under it, attended by lancinating pains. The breast was removed in July, 1877; the wound

healed well; no glands were affected. About a month afterwards was taken out for a drive, and thought she caught cold; severe gnawing pain was felt in right hip-joint, and running down to the knee; great difficulty in walking. In October, the general health had been much improved by a sojourn at Hastings; but the hip-pain remained unaltered, and there was growing weakness. In November, jaundice came on, the hands being affected last, and the nails remaining of natural colour when all the rest of the body was yellow. Anorexia and constant vomiting were present; the liver was enlarged, and at one spot a hard nodule could be felt, with great tenderness on pressure. There was one small nodule under the cicatrix. Death took place in ten days.

It may be remarked that deposit in the liver, subsequent to scirrhus cancer of the breast, is most exceptional; that is to say, without long-continued local ulceration, and wide extension from the original site. Excluding these, I have seen it only in one case similar to the foregoing.

CASE 7. *Duct-cancer following Paget's disease of the nipple, and debilitating influences; speedy recurrence after operation.* — Margaret W., aged about 40; a little, thin, delicate-looking woman, with no family history of cancer. Had kept a school for many years (seen in November, 1877). For previous seven years there had, every three weeks, been menorrhagia lasting eight or ten days, and for past

thirteen months leucorrhœa at intervals. For three years there had appeared a small ulcerated spot on the right nipple, which had gradually extended over the whole areola; the latter presented the characteristic strawberry-like appearance. In April, 1877, a small lump appeared below the outer border of the pectoralis major; this remained stationary till seven weeks before admission into hospital; then had undergone rapid increase. An eminent provincial surgeon had been consulted, who gave a doubtful opinion as to malignancy.

On admission there was, with the characters of Paget's disease, a freely-movable tumour under the right pectoralis, as large as a goose's egg, rounded, hard (but not with the hardness of scirrhus), of a rough, granular feel. Upon removal, the tumour presented all the appearance of an enlarged lymphatic gland, with its central part broken down, and filled with blood-clot. There were no glands in the axilla enlarged, and it is greatly to be regretted that the contents of that cavity (a task of some difficulty in such an emaciated subject) were not also removed; but at the time of removal, the naked-eye appearances of the tumour were not at all those of cancer. However, there was recurrence in those glands within a few months, and a second operation proved of no more permanent benefit than did the first. In fact, viewing the amount of local disease primarily apparent, and the spare habit of the patient, the duct-epithelioma ran a much more rapid and malignant course than does ordinary scirrhus.

CASE 8. *Scirrho-cystic tumour of right breast, apparently due to walls of cysts in a cystic adenoid tumour assuming malignancy, through debilitating conditions.*—Elizabeth W., aged 56; dressmaker. No injury; no family history of cancer. Always much trouble and hard work. Husband died three months before admission to hospital; had nursed him through a five-months' illness, and had sat up much at night.

Some small tumour had existed for eight or nine years, and the nipple had been drawn in for four or five. There had been no enlargement till death of husband, three months ago, and no pain or inconvenience; since then, a progressive increase. On admission, the breast was considerably enlarged—about the size of two fists—rounded, and prominent; indistinct fluctuation could be felt over the greater part, which was elastic to the touch. The base was generally hard, especially at upper part; but not very much so. The nipple was completely retracted; from its site protruded a distinctly fluctuating tumour about an inch in diameter, with the skin over it reddened. No enlargement of the axillary glands was perceptible, and the humerus was unaffected. The patient was a pale, grey-haired woman, rather stout. Occasional lancinating pain was complained of.

The tumour was removed on August 31st, 1883. It proved to be mainly composed of cysts, containing a dark-green fluid; when this was evacuated, a soft ashy-grey material, apparently altered blood-clot, was found lying loose in the loculi. The

inter-cystic material generally had a fibrous appearance ; at one or two spots, myxomatous ; but superiorly where the hardness was most marked, it was "gritty" on section by the knife, and presented the typical whitish or yellowish puncta in a quasi-gelatinous material, characteristic of scirrhus. The axillary contents were scooped out ; one lymph-gland proved to be as large as a horse-bean, embedded in abundant adipose tissue.

CASE 9. *Carcinoma uteri after parturition ; mental trouble, etc.*—Elizabeth D. ; married ; eight children. No family history ; no injury ; no particularly hard work. About eighteen months ago lost two children in one week by scarlatina. A year ago was confined of a dead child ; had a "bad time," but no instruments were used. Has never been well, and has had almost continuous hæmorrhage, with latterly a foetid discharge. Upon examination, deep excavation of the cervix uteri, with infiltration of parts around.

CASE 10. *Encephaloid cancer of cervix uteri ; history of mental trouble ; successful extirpation by three caustic applications under ether.*—Mrs. E. J. F., aged 43 ; mother of a large family ; subject for some years to occasional attacks of menorrhagia. No family history of cancer. Of late years, much anxiety about pecuniary matters ; was often disturbed at night. Had been quite free from any uterine hæmorrhage, menstrual or otherwise, for eight months ; was then

much distressed by the misbehaviour of a relative. Uterine hæmorrhage began to show itself in attacks at irregular intervals; after two months, there was incessant "loss" for five weeks. The patient was then examined; the margin of the os uteri was healthy, but just within it a soft, roundish "boss," bleeding freely when touched, was felt. There were frequent attacks of vomiting, but no pain, more than could be referred to increasing debility. The loss of blood was rapidly wearing the woman out.

Under ether, *potassa fusa* was freely applied. On recovery from the immediate effects, there was a marked improvement in the general health; but after three weeks a fresh growth was felt, and the application repeated. After another three weeks a prominent bleeding surface was again manifest. This time chloride of zinc was used. The patient did not rally so soon as after the previous operations, but subsequently regained perfect health. The whole of the intra-vaginal portion of the cervix had been destroyed by the repeated applications; a puckering at the far end of the vagina indicated the locality of the os uteri, and above this the fundus could be felt as a roundish mass, freely movable. The growth had extended quite to the *os uteri internum*; and had required for its removal complete extirpation of the cervix up to that spot.

CASE 11. *Carcinoma uteri, subsequent to parturition; mental anxiety.*—Catherine W., aged 48;

married ; no children. No injury ; no family history of cancer. Has had great trouble—first long illness of self, then ditto of husband ; they subsequently failed in business ; also some particular business trouble about a year ago. Symptoms of cancer date from nine months since. Upon examination, the usual deep excavation and surrounding infiltration.

CASE 12. *Scirrhus of left breast ; mental trouble.*—Jessie M. ; married ; two children. No injury. Father's sister died of breast-cancer ; father's brother of intestinal cancer ; a female cousin had some tumour when patient's first appeared. About a year ago, lost a friend by death ; grieved much about this, and nights were broken ; the tumour was noticed a month afterwards. When first seen, the disease was far advanced ; an ulcerated fungous mass covered the site of the left breast ; there were enlarged axillary glands, but no affection of the humerus was perceptible. Great pain was felt in lumbar region, and the health was breaking down.

CASE 13. *Carcinoma uteri, subsequent to parturition ; mental trouble.*—Sarah W. ; married ; aged 44. No cancerous family history. Has had much trouble and worry. Was last confined two years ago, and instruments were then used to terminate a labour of six days' duration. Attacks of hæmorrhage soon followed. On admission, the usual appearances of advanced carcinoma were present.

CASE 14. *Carcinoma uteri; mental trouble.*—Adelaide W., aged 45; married; two children (youngest eleven years old). No family history of cancer; no hard labours. Had some mental trouble eighteen months before she appeared as a hospital patient; five months after this, discharge, tinged with blood came on, followed by the usual symptoms of cancer. On examination, the cervix was found extensively diseased.

CASE 15. *Cauliflower excrescence; mental trouble; application of solid perchloride of iron.*—Mathilde B.; married; six children; aged 36. No family history of cancer. Mental distress and anxiety for past two years, husband being out of work. Youngest child was two years old when patient was first seen; there was occasional hæmorrhage during the pregnancy; after the confinement much pain in the right iliac region. Five months subsequently, attacks of hæmorrhage again supervened, alternating with watery discharge; these had continued seventeen months to time of admission. Upon examination, the cervix was found to be very short, and wholly converted into an irregularly nodulated bleeding mass. The solid perchloride of iron was applied four times, at intervals of a week; on subsequent examination, the cervix, instead of projecting, was found excavated; a hard ring surrounded a central portion of apparently healthy tissue. The patient felt pain occasionally in left iliac region; was otherwise greatly improved in health, having now no hæmorrhage.

She left the hospital soon afterwards, and was lost sight of. (This case, though not included in the title, has been inserted on account of the treatment.)

CASE 16. *Sarcoma of right superior maxilla; mental trouble.* — James T., aged 39. Thinks father's sister had uterine cancer; no other relative affected. For past five years has had repeated abscesses (which he used to break himself with the finger) connected with a tooth in right upper jaw. A brother died fifteen months ago, and his father just before. The growth of the tumour began three months subsequently, and has since been rapid. There was previously some chronic thickening of the bone, productive of no inconvenience.

When first seen, all the teeth in the right upper jaw had been extracted; an ulcerated fungous mass occupied the greater part of the roof of the mouth. There was obstruction of the right nostril, and discharge of sanious matter therefrom. The whole of the bone was enlarged; there were also diseased glands under the jaw, and in the neck.

CASE 17. *Carcinoma uteri; mental trouble.* — Sophia C., aged 38; widow; eight children; nurse. No cancerous family history. Had lost husband and five children at different times. Had much worry and anxiety, nursing a troublesome patient two months previously to appearance of hæmorrhage, and of other usual symptoms. Was then

operated on at University College Hospital. Now, August 24th, 1883, the ordinary appearances of advanced carcinoma; in addition, the clitoris is as large as a good-sized bean, hard, and freely movable. Most of the pain is referred to that spot.

CASE 18.—*Carcinoma uteri; mental shock, subsequent to parturition.*—Susannah R., aged 35; twice married; seven children. No family history of cancer. Fall eighteen months ago, but no special injury. Much worry about business. Child born in December, 1882, and easy labour; five weeks afterwards brother killed in railway accident; patient has never felt well since. Clots began to appear four months ago; no pain till quite recently (August 24th, 1883); deeply excavated malignant ulcer.

CASE 19. *Myxo-sarcoma of left breast (doubtful malignancy).*—Emma R.; single; aged 33. No family history of cancer; blow at uncertain period before growth of tumour; this of four years' duration. No mental trouble. Hard work as still-room maid. *State on admission:* At upper part of the left breast, a prominent tumour, elastic, not hard, freely movable, on deep pressure giving an indistinct feeling of fluctuation. Several "bosses" prominent, as large as marbles. No enlarged glands in axilla, or tenderness of humerus; always good health. On removal, tumour found to extend deeply by "bosses" on its under surface, pressing into the pectoralis. There were no cysts; the bosses contained a yellow gela-

tinous material, mingled with a soft, white, granular basis, which readily crumbled down at the touch. Dr. Heneage Gibbes, who very kindly examined a portion, pronounced it to be a myxo-sarcoma.

CASE 20. *Scirrhus of right breast; worry and anxiety.*—Mrs. C., aged 48; one child; husband captain of a merchant vessel. No injury; no family history of cancer. Mental worry for past year, on account of husband's not holding a comfortable appointment; husband, of course, frequently absent at sea, and some anxiety on that account; lately treated for uterine ulceration. Scirrhus tumour appeared four months before the patient was seen; no enlargement of the axillary glands was perceptible, but there was some thickening of the right humerus in the upper third. No tenderness in that situation; but the patient stated that the bone had previously felt sore. The tumour was of the size of a large walnut; was freely movable.

APPENDIX C.

TWENTY-SIX CASES DIAGNOSED AS SARCOMA; INSERTED TO SHOW THEIR CAUSATION, AS FAR AS POSSIBLE.

Name.	Part Affected.	Age.	Family History of Cancer.	Duration when first seen.	Causes.
William W. (labourer).	Osteoid Sarcoma of Neck. An extremely hard tumour above right clavicle, of rapid growth, springing apparently from transverse processes of vertebræ. Patient lost sight of before death, so diagnosis not confirmed by post-mortem examination.	50	Nil.	6 months	No mental trouble; no hard work or injury. Cause doubtful.
Mary Y.	Cheek and Upper Jaw.	75	Nil.	7 years	No injury. Doubtful history of mental trouble.
Jane L.	Sternum and Left Breast.	51	Nil.	3 years	Fall four years ago. Mental trouble; loss of several children.
Elizabeth E.	Right Breast.	56	Nil.	2 years	Mental trouble.
Robina W.	Right Breast.	46	Nil.	4 years	Several falls; mental trouble.

Isabel P.	Fundus Uteri.	49	Father died of cancer of liver; mother had internal ditto, but died of heart disease. Nil.	6 months	No injury. Loss of husband eighteen months ago. Much anxiety otherwise.
Elizabeth W.	Liver.	66	Nil.	9 months	Mental trouble and hard work for past four years.
Harriet U.	Neck.	58	Father had cancer of tongue.	6 months	Much mental trouble and anxiety. Reduced circumstances, having lost £25,000 in Overend, Gurney, & Co.
Jane F.	Right Breast.	62	Nil.	1½ year	Fall three years ago. Mental distress since.
Albert B.	Right Thigh (lower third of femur).	20	Nil.	About 3 months	No injury. Mental anxiety and disappointment; also sitting up much at night, and working for examination.
Alice K.	Right Breast	35	Nil.	noticed 6 weeks	No injury. No mental trouble, or particularly hard work. Miscarriage a year ago. No children.

Name.	Part Affected.	Age.	Family History of Cancer.	Duration when first seen.	Causes.
Mary F.	Abdominal Organs.	56	Nil.	1 month	No injury. Mental trouble and privation (Case 1, Appendix B).
Jane W.	Left Breast.	39	Mother's mother had cancer, site uncertain.	1½ year	No injury. Mental trouble; loss of husband two years; subsequent anxiety about child (Case 12, Appendix A).
Mary Anne M.	Left Breast (small fluctuating tumour, simulating a cyst).	47	Nil.	1½ year	No injury. Eight children. Rheumatic fever three times. Has lately lost a child to her great grief; but says there was no mental trouble before appearance of tumour.
John M.	Left Scapula.	53	Nil.	6 months	No injury. History of sitting up several nights as game-keeper, with exposure to cold and wet; of rigors, followed by pain in left side, and feverishness for several days. Tumour appeared just afterwards.

Caroline A. (single.)	Fundus Uteri.	53	Nil.	1 year	No injury. Hard work with sewing machine; mental trouble four years ago.
Ellen J.	Upper Jaw (right).	73	Nil.	2 years	Fell down stairs two years ago, and fractured thigh. Lost husband about same time, and fretted much. Tumour appeared soon after. Memory imperfect.
Catherine F.	Left Thigh; Spindle-celled Sarcoma, recurrent after operations.	41	Nil.	12 years since first appearance of tumour	No injury. Always much mental trouble; otherwise very reserved about her history; of dubious antecedents.
Elizabeth F.	Fundus Uteri.	50	Nil.	3 years	Always delicate. Much hard work as nurse, and mental trouble besides. No injury.
John C.	Right Tonsil.	43	Nil.	6 months	Mental distress. Disease began as sore throat, and was at first thought to be tonsillitis. No injury.
Jane G.	Right Breast.	65	Nil.	1 year	No injury. Mental trouble; loss of husband three years ago; subject to rheumatic gout.

Name.	Part Affected.	Age.	Family History of Cancer.	Duration when first seen.	Causes.
John E.	Abdomen (probably of omentum).	59	Nil.	3 months	No injury. No mental trouble; hard work as labourer, and bad living.
James T.	Right Upper Jaw.	39	Thinks father's sister had uterine cancer; no other relative.	1 year	For previous five years repeated abscess of tooth. Death of brother fifteen months ago; of father just before (see Case 16, Appendix B).
James R.	Liver and Abdominal Organs.	43	Nil.	2 months	Concussion in railway accident two years ago. Mental trouble. Loss of relative a year ago, and since then business troubles.
Susan G.	Left Breast.	53	Nil.	1 year	No injury. No mental trouble. Hard work as laundress. Eight children.
Elizabeth K.	Scalp.	53	Nil.	6 years	Much hard work and trouble; fall and scalp wound an uncertain time before.

Pardon and Sons, Printers, Paternoster Row, London.



J. & A. CHURCHILL'S
MEDICAL CLASS BOOKS.

ANATOMY.

BRAUNE.—An Atlas of Topographical Anatomy, after Plane Sections of Frozen Bodies. By WILHELM BRAUNE, Professor of Anatomy in the University of Leipzig. Translated by EDWARD BELLAMY, F.R.C.S., and Member of the Board of Examiners; Surgeon to Charing Cross Hospital, and Lecturer on Anatomy in its School. With 34 Photo-lithographic Plates and 46 Woodcuts. Large Imp. 8vo, 40s.

FLOWER.—Diagrams of the Nerves of the Human Body, exhibiting their Origin, Divisions, and Connexions, with their Distribution to the various Regions of the Cutaneous Surface, and to all the Muscles. By WILLIAM H. FLOWER, F.R.C.S., F.R.S., Hunterian Professor of Comparative Anatomy, and Conservator of the Museum, Royal College of Surgeons. Third Edition, containing 6 Plates. Royal 4to, 12s.

GODLEE.—An Atlas of Human Anatomy: illustrating most of the ordinary Dissections and many not usually practised by the Student. By RICKMAN J. GODLEE, M.S., F.R.C.S., Assistant-Surgeon to University College Hospital, and Senior Demonstrator of Anatomy in University College. With 48 Imp. 4to Coloured Plates, containing 112 Figures, and a Volume of Explanatory Text, with many Engravings. 8vo, £4 14s. 6d.

HEATH.—Practical Anatomy: a Manual of Dissections. By CHRISTOPHER HEATH, F.R.C.S., Holme Professor of Clinical Surgery in University College and Surgeon to the Hospital. Fifth Edition. With 24 Coloured Plates and 269 Engravings. Crown 8vo, 15s.

ANATOMY—continued.

HOLDEN.—A Manual of the Dissection of the Human Body. By LUTHER HOLDEN, F.R.C.S., Consulting-Surgeon to St. Bartholomew's Hospital. Fourth Edition. Revised by the Author and JOHN LANGTON, F.R.C.S., Surgeon and Lecturer on Anatomy at St. Bartholomew's Hospital. With Engravings. 8vo, 16s.

By the same Author.

Human Osteology : comprising a Description of the Bones, with Delineations of the Attachments of the Muscles, the General and Microscopical Structure of Bone and its Development. Sixth Edition, revised by the Author and JAMES SHUTE, F.R.C.S., Assistant-Surgeon to St. Bartholomew's Hospital. With 61 Lithographic Plates and 89 Engravings. Royal 8vo, 16s.

ALSO,

Landmarks, Medical and Surgical. Third Edition. 8vo, 3s. 6d.

MORRIS.—The Anatomy of the Joints of Man.

By HENRY MORRIS, M.A., F.R.C.S., Surgeon to, and Lecturer on Anatomy and Practical Surgery at, the Middlesex Hospital. With 44 Plates (19 Coloured) and Engravings. 8vo, 16s.

The Anatomical Remembrancer ; or, Complete Pocket Anatomist. Eighth Edition. 32mo, 3s. 6d.

WAGSTAFFE.—The Student's Guide to Human Osteology. By WM. WARWICK WAGSTAFFE, F.R.C.S., late Assistant-Surgeon to, and Lecturer on Anatomy at, St. Thomas's Hospital. With 23 Plates and 66 Engravings. Fcap. 8vo, 10s. 6d.

WILSON — BUCHANAN — CLARK.—Wilson's Anatomist's Vade-Mecum: a System of Human Anatomy. Tenth Edition, by GEORGE BUCHANAN, Professor of Clinical Surgery in the University of Glasgow, and HENRY E. CLARK, M.R.C.S., Lecturer on Anatomy in the Glasgow Royal Infirmary School of Medicine. With 450 Engravings, including 26 Coloured Plates. Crown 8vo, 18s.

11, NEW BURLINGTON STREET.

BOTANY.

BENTLEY.—*A Manual of Botany.* By Robert BENTLEY, F.L.S., M.R.C.S., Professor of Botany in King's College and to the Pharmaceutical Society. With 1185 Engravings. Fourth Edition. Crown 8vo, 15s.

By the same Author.

The Student's Guide to Structural, Morphological, and Physiological Botany. With 660 Engravings. Fcap. 8vo, 7s. 6d.

BENTLEY AND TRIMEN.—*Medicinal Plants:* being descriptions, with original Figures, of the Principal Plants employed in Medicine, and an account of their Properties and Uses. By ROBERT BENTLEY, F.L.S., and HENRY TRIMEN, M.B., F.L.S. In 4 Vols., large 8vo, with 306 Coloured Plates, bound in half morocco, gilt edges, £11 11s.

CHEMISTRY.

BERNAYS.—*Notes for Students in Chemistry;* being a Syllabus of Chemistry compiled mainly from the Manuals of Fownes-Watts, Miller, Wurz, and Schorlemmer. By ALBERT J. BERNAYS, Ph.D., Professor of Chemistry at St. Thomas's Hospital. Sixth Edition. Fcap. 8vo, 3s. 6d.

By the same Author.

Skeleton Notes on Analytical Chemistry, for Students in Medicine. Fcap. 8vo, 2s. 6d.

BLOXAM.—*Chemistry, Inorganic and Organic;* with Experiments. By CHARLES L. BLOXAM, Professor of Chemistry in King's College. Fifth Edition. With nearly 300 Engravings. 8vo, 16s.

By the same Author.

Laboratory Teaching; or, Progressive Exercises in Practical Chemistry. Fourth Edition. With 83 Engravings. Crown 8vo, 5s. 6d.

CHEMISTRY—*continued.*

BOWMAN AND BLOXAM.—Practical Chemistry, including Analysis. By JOHN E. BOWMAN, formerly Professor of Practical Chemistry in King's College, and CHARLES L. BLOXAM, Professor of Chemistry in King's College. With 98 Engravings. Seventh Edition. Fcap. 8vo, 6s. 6d.

BROWN.—Practical Chemistry: Analytical Tables and Exercises for Students. By J. CAMPBELL BROWN, D.Sc. Lond., Professor of Chemistry in University College, Liverpool. Second Edition. 8vo, 2s. 6d.

CLOWES.—Practical Chemistry and Qualitative Inorganic Analysis. An Elementary Treatise, specially adapted for use in the Laboratories of Schools and Colleges, and by Beginners. By FRANK CLOWES, D.Sc., Professor of Chemistry in University College, Nottingham. Third Edition. With 47 Engravings. Post 8vo, 7s. 6d.

FOWNES.—Manual of Chemistry.—*See WATTS.*

LUFF.—An Introduction to the Study of Chemistry. Specially designed for Medical and Pharmaceutical Students. By A. P. LUFF, F.I.C., F.C.S., Lecturer on Chemistry in the Central School of Chemistry and Pharmacy. Crown 8vo, 2s. 6d.

TIDY.—A Handbook of Modern Chemistry, Inorganic and Organic. By C. MEYMOTT TIDY, M.B., Professor of Chemistry and Medical Jurisprudence at the London Hospital. 8vo, 16s.

VACHER.—A Primer of Chemistry, including Analysis. By ARTHUR VACHER. 18mo, 1s.

VALENTIN.—Introduction to Inorganic Chemistry. By WILLIAM G. VALENTIN, F.C.S. Third Edition. With 82 Engravings. 8vo, 6s. 6d.

By the same Author.

Chemical Tables for the Lecture-room and Laboratory. In Five large Sheets, 5s. 6d.

CHEMISTRY—*continued.*

VALENTIN AND HODGKINSON.—A Course of Qualitative Chemical Analysis. By W. G. VALENTIN, F.C.S. Fifth Edition by W. R. HODGKINSON, Ph.D. (Würzburg), Demonstrator of Practical Chemistry in the Science Training Schools. With Engravings. 8vo, 7s. 6d.

WATTS.—Physical and Inorganic Chemistry. By HENRY WATTS, B.A., F.R.S. (being Vol. I. of the Thirteenth Edition of Fownes' Manual of Chemistry). With 150 Wood Engravings, and Coloured Plate of Spectra. Crown 8vo, 9s.

By the same Author.

Chemistry of Carbon - Compounds, or Organic Chemistry (being Vol. II. of the Twelfth Edition of Fownes' Manual of Chemistry). With Engravings. Crown 8vo, 10s.

CHILDREN, DISEASES OF.

DAY.—A Treatise on the Diseases of Children. For Practitioners and Students. By WILLIAM H. DAY, M.D., Physician to the Samaritan Hospital for Women and Children. Crown 8vo, 12s. 6d.

ELLIS.—A Practical Manual of the Diseases of Children. By EDWARD ELLIS, M.D., late Senior Physician to the Victoria Hospital for Sick Children. With a Formulary. Fourth Edition. Crown 8vo, 10s.

SMITH.—Clinical Studies of Disease in Children. By EUSTACE SMITH, M.D., F.R.C.P., Physician to H.M. the King of the Belgians, and to the East London Hospital for Children. Second Edition. Post 8vo. [In preparation.]

By the same Author.

On the Wasting Diseases of Infants and Children. Fourth Edition. Post 8vo. [Nearly ready.]

STEINER.—Compendium of Children's Diseases; a Handbook for Practitioners and Students. By JOHANN STEINER, M.D. Translated by LAWSON TAIT, F.R.C.S., Surgeon to the Birmingham Hospital for Women, &c. 8vo, 12s. 6d.

DENTISTRY.

SEWILL.—*The Student's Guide to Dental Anatomy and Surgery.* By HENRY E. SEWILL, M.R.C.S., L.D.S., late Dental Surgeon to the West London Hospital. Second Edition. With 78 Engravings. Fcap. 8vo, 5s. 6d.

STOCKEN.—*Elements of Dental Materia Medica and Therapeutics, with Pharmacopœia.* By JAMES STOCKEN, L.D.S.R.C.S., late Lecturer on Dental Materia Medica and Therapeutics and Dental Surgeon to the National Dental Hospital, assisted by THOMAS GADDES, L.D.S. Eng. and Edin. Third Edition. Fcap. 8vo, 7s. 6d.

TAFT.—*A Practical Treatise on Operative Dentistry.* By JONATHAN TAFT, D.D.S., Professor of Operative Surgery in the Ohio College of Dental Surgery. Third Edition. With 184 Engravings. 8vo, 18s.

TOMES (C. S.).—*Manual of Dental Anatomy, Human and Comparative.* By CHARLES S. TOMES, M.A., F.R.S. Second Edition. With 191 Engravings. Crown 8vo, 12s. 6d.

TOMES (J. and C. S.).—*A Manual of Dental Surgery.* By JOHN TOMES, M.R.C.S., F.R.S., and CHARLES S. TOMES, M.A., M.R.C.S., F.R.S.; Lecturer on Anatomy and Physiology at the Dental Hospital of London. Second Edition. With 262 Engravings. Fcap. 8vo, 14s.

EAR, DISEASES OF.

BURNETT.—*The Ear: its Anatomy, Physiology, and Diseases.* A Practical Treatise for the Use of Medical Students and Practitioners. By CHARLES H. BURNETT, M.D., Aural Surgeon to the Presbyterian Hospital, Philadelphia. With 87 Engravings. 8vo, 18s.

DALBY.—*On Diseases and Injuries of the Ear.* By WILLIAM B. DALBY, F.R.C.S., Aural Surgeon to, and Lecturer on Aural Surgery at, St. George's Hospital. Second Edition. With Engravings. Fcap. 8vo, 6s. 6d.

J. & A. Churchill's Medical Class Books.

EAR, DISEASES OF—*continued.*

JONES.—**A Practical Treatise on Aural Surgery.** By H. MACNAUGHTON JONES, M.D., Professor of the Queen's University in Ireland, late Surgeon to the Cork Ophthalmic and Aural Hospital. Second Edition. With 63 Engravings. Crown 8vo, 8s. 6d.

By the same Author.

Atlas of the Diseases of the Membrana Tympani. In Coloured Plates, containing 59 Figures. With Explanatory Text. Crown 4to, 21s.

FORENSIC MEDICINE.

OGSTON.—**Lectures on Medical Jurisprudence.**

By FRANCIS OGSTON, M.D., late Professor of Medical Jurisprudence and Medical Logic in the University of Aberdeen. Edited by FRANCIS OGSTON, Jun., M.D., late Lecturer on Practical Toxicology in the University of Aberdeen. With 12 Plates. 8vo, 18s.

TAYLOR.—**The Principles and Practice of**

Medical Jurisprudence. By ALFRED S. TAYLOR, M.D., F.R.S. Third Edition, revised by THOMAS STEVENSON, M.D., F.R.C.P., Lecturer on Chemistry and Medical Jurisprudence at Guy's Hospital; Examiner in Chemistry at the Royal College of Physicians; Official Analyst to the Home Office. With 188 Engravings. 2 Vols. 8vo, 31s. 6d.

By the same Author.

A Manual of Medical Jurisprudence.

Tenth Edition. With 55 Engravings. Crown 8vo, 14s.

ALSO,

On Poisons, in relation to Medical Jurisprudence and Medicine. Third Edition. With 104 Engravings. Crown 8vo, 16s.

TIDY AND WOODMAN.—**A Handy-Book of**

Forensic Medicine and Toxicology. By C. MEYMOTT TIDY, M.B.; and W. BATHURST WOODMAN, M.D., F.R.C.P. With 8 Lithographic Plates and 116 Wood Engravings. 8vo, 31s. 6d.

11, NEW BURLINGTON STREET.

HYGIENE.

PARKES.—A Manual of Practical Hygiene.

By EDMUND A. PARKES, M.D., F.R.S. Sixth Edition by F. DE CHAUMONT, M.D., F.R.S., Professor of Military Hygiene in the Army Medical School. With 9 Plates and 103 Engravings. 8vo, 18s.

WILSON.—A Handbook of Hygiene and Sanitary Science.

By GEORGE WILSON, M.A., M.D., Medical Officer of Health for Mid Warwickshire. Fifth Edition. With Engravings. Crown 8vo. [Nearly ready.]

MATERIA MEDICA AND THERAPEUTICS.

BINZ AND SPARKS.—The Elements of Therapeutics: a Clinical Guide to the Action of Medicines.

By C. BINZ, M.D., Professor of Pharmacology in the University of Bonn. Translated and Edited with Additions, in conformity with the British and American Pharmacopœias, by EDWARD I. SPARKS, M.A., M.B., F.R.C.P. Lond. Crown 8vo, 8s. 6d.

OWEN.—A Manual of Materia Medica; incorporating the Author's "Tables of Materia Medica."

By ISAMBARD OWEN, M.D., Lecturer on Materia Medica and Therapeutics to St. George's Hospital. Crown 8vo, 6s.

ROYLE AND HARLEY.—A Manual of Materia Medica and Therapeutics.

By J. FORBES ROYLE, M.D., F.R.S., and JOHN HARLEY, M.D., F.R.C.P., Physician to, and Joint Lecturer on Clinical Medicine at, St. Thomas's Hospital. Sixth Edition. With 139 Engravings. Crown 8vo, 15s.

THOROWGOOD.—The Student's Guide to Materia Medica and Therapeutics.

By JOHN C. THOROWGOOD, M.D., F.R.C.P., Lecturer on Materia Medica at the Middlesex Hospital. Second Edition. With Engravings. Fcap. 8vo, 7s.

WARING.—A Manual of Practical Therapeutics.

By EDWARD J. WARING, C.I.E., M.D., F.R.C.P. Third Edition. Fcap. 8vo, 12s. 6d.

MEDICINE.

BARCLAY.—A Manual of Medical Diagnosis.

By A. WHYTE BARCLAY, M.D., F.R.C.P., late Physician to, and Lecturer on Medicine at, St. George's Hospital. Third Edition. Fcap. 8vo, 10s. 6d.

CHARTERIS.—The Student's Guide to the

Practice of Medicine. By MATTHEW CHARTERIS, M.D., Professor of Materia Medica, University of Glasgow; Physician to the Royal Infirmary. With Engravings on Copper and Wood. Third Edition. Fcap. 8vo, 7s.

FENWICK.—The Student's Guide to Medical

Diagnosis. By SAMUEL FENWICK, M.D., F.R.C.P., Physician to the London Hospital. Fifth Edition. With 111 Engravings. Fcap. 8vo, 7s.

By the same Author.

The Student's Outlines of Medical Treatment. Second Edition. Fcap. 8vo, 7s.

FLINT.—Clinical Medicine: a Systematic Treatise on the Diagnosis and Treatment of Disease. By AUSTIN FLINT,

M.D., Professor of the Principles and Practice of Medicine, &c., in Bellevue Hospital Medical College. 8vo, 20s.

HALL.—Synopsis of the Diseases of the Larynx,

Lungs, and Heart: comprising Dr. Edwards' Tables on the Examination of the Chest. With Alterations and Additions. By F. DE HAVILLAND HALL, M.D., F.R.C.P., Assistant-Physician to the Westminster Hospital. Royal 8vo, 2s. 6d.

SANSOM.—Manual of the Physical Diagnosis

of Diseases of the Heart, including the use of the Sphygmograph and Cardiograph. By A. E. SANSOM, M.D., F.R.C.P., Assistant-Physician to the London Hospital. Third Edition. With 47 Woodcuts. Fcap. 8vo, 7s. 6d.

WARNER.—Student's Guide to Medical Case-

Taking. By FRANCIS WARNER, M.D., F.R.C.P., Assistant-Physician to the London Hospital. Fcap. 8vo, 5s.

WEST.—How to Examine the Chest: being a

Practical Guide for the Use of Students. By SAMUEL WEST, M.D., M.R.C.P., Physician to the City of London Hospital for Diseases of the Chest, &c. With 42 Engravings. Fcap. 8vo, 5s.

MEDICINE—*continued.*

WHITTAKER.—Students' Primer on the Urine.

By J. TRAVIS WHITTAKER, M.D., Clinical Demonstrator at the Royal Infirmary, Glasgow. With Illustrations, and 16 Plates etched on Copper. Post 8vo, 4s. 6d.

MIDWIFERY.

BARNES.—Lectures on Obstetric Operations,

including the Treatment of Hæmorrhage, and forming a Guide to the Management of Difficult Labour. By ROBERT BARNES, M.D., F.R.C.P., Obstetric Physician to, and Lecturer on Diseases of Women, &c., at, St. George's Hospital. Third Edition. With 124 Engravings. 8vo, 18s.

CLAY.—The Complete Handbook of Obstetric

Surgery; or, Short Rules of Practice in every Emergency, from the Simplest to the most formidable Operations connected with the Science of Obstetrics. By CHARLES CLAY, M.D., late Senior Surgeon to, and Lecturer on Midwifery at, St. Mary's Hospital, Manchester. Third Edition. With 91 Engravings. Fcap. 8vo, 6s. 6d.

RAMSBOTHAM.—The Principles and Practice

of Obstetric Medicine and Surgery. By FRANCIS H. RAMSBOTHAM, M.D., formerly Obstetric Physician to the London Hospital. Fifth Edition. With 120 Plates, forming one thick handsome volume. 8vo, 22s.

REYNOLDS.—Notes on Midwifery: specially

designed to assist the Student in preparing for Examination. By J. J. REYNOLDS, L.R.C.P., M.R.C.S. Fcap. 8vo, 4s.

ROBERTS.—The Student's Guide to the Practice

of Midwifery. By D. LLOYD ROBERTS, M.D., F.R.C.P., Physician to St. Mary's Hospital, Manchester. Third Edition. With Engravings. Fcap. 8vo. [In the Press.]

SCHROEDER.—A Manual of Midwifery; includ-

ing the Pathology of Pregnancy and the Puerperal State. By KARL SCHROEDER, M.D., Professor of Midwifery in the University of Erlangen. Translated by CHARLES H. CARTER, M.D. With Engravings. 8vo, 12s. 6d.

MIDWIFERY—*continued.*

SWAYNE.—**Obstetric Aphorisms for the Use of**
Students commencing Midwifery Practice. By JOSEPH G. SWAYNE,
M.D., Lecturer on Midwifery at the Bristol School of Medicine. Seventh
Edition. With Engravings. Fcap. 8vo, 3s. 6d.

MICROSCOPY.

CARPENTER.—**The Microscope and its Revela-**
tions. By WILLIAM B. CARPENTER, C.B., M.D., F.R.S. Sixth Edition.
With 26 Plates, a Coloured Frontispiece, and more than 500 Engravings.
Crown 8vo, 16s.

MARSH.—**Microscopical Section-Cutting: a**
Practical Guide to the Preparation and Mounting of Sections for the
Microscope, special prominence being given to the subject of Animal
Sections. By Dr. SYLVESTER MARSH. Second Edition. With 17
Engravings. Fcap. 8vo, 3s. 6d.

MARTIN.—**A Manual of Microscopic Mounting.**
By JOHN H. MARTIN, Member of the Society of Public Analysts, &c.
Second Edition. With several Plates and 144 Engravings. 8vo, 7s. 6d.

OPHTHALMOLOGY.

DAGUENET.—**A Manual of Ophthalmoscopy**
for the Use of Students. By Dr. DAGUENET. Translated by C. S.
JEAFFRESON, Surgeon to the Newcastle-on-Tyne Eye Infirmary. With
Engravings. Fcap. 8vo, 5s.

HIGGENS.—**Hints on Ophthalmic Out-Patient**
Practice. By CHARLES HIGGENS, F.R.C.S., Ophthalmic Surgeon to,
and Lecturer on Ophthalmology at, Guy's Hospital. Second Edition.
Fcap. 8vo, 3s.

JONES.—**A Manual of the Principles and**
Practice of Ophthalmic Medicine and Surgery. By T. WHARTON JONES,
F.R.C.S., F.R.S., late Ophthalmic Surgeon and Professor of Ophthalmo-
logy to University College Hospital. Third Edition. With 9 Coloured
Plates and 173 Engravings. Fcap. 8vo, 12s. 6d.

OPHTHALMOLOGY—*continued.*

MACNAMARA.—A Manual of the Diseases of the Eye. By CHARLES MACNAMARA, F.R.C.S., Surgeon to, and Lecturer on Surgery at, Westminster Hospital. Fourth Edition. With 4 Coloured Plates and 66 Engravings. Fcap. 8vo, 10s. 6d.

NETTLESHIP.—The Student's Guide to Diseases of the Eye. By EDWARD NETTLESHIP, F.R.C.S., Ophthalmic Surgeon to, and Lecturer on Ophthalmic Surgery at, St. Thomas's Hospital. Second Edition. With 137 Engravings, and a Set of Coloured Papers illustrating Colour-blindness. Fcap. 8vo, 7s. 6d.

WOLFE.—On Diseases and Injuries of the Eye: a Course of Systematic and Clinical Lectures to Students and Medical Practitioners. By J. R. WOLFE, M.D., F.R.C.S.E., Senior Surgeon to the Glasgow Ophthalmic Institution, Lecturer on Ophthalmic Medicine and Surgery in Anderson's College. With 10 Coloured Plates, and 120 Wood Engravings, 8vo.

PATHOLOGY.

JONES AND SIEVEKING.—A Manual of Pathological Anatomy. By C. HANDFIELD JONES, M.B., F.R.S., and EDWARD H. SIEVEKING, M.D., F.R.C.P. Second Edition. Edited, with considerable enlargement, by J. F. PAYNE, M.B., Assistant-Physician and Lecturer on General Pathology at St. Thomas's Hospital. With 195 Engravings. Crown 8vo, 16s.

LANCEREAUX.—Atlas of Pathological Anatomy. By Dr. LANCEREAUX. Translated by W. S. GREENFIELD, M.D., Professor of Pathology in the University of Edinburgh. With 70 Coloured Plates. Imperial 8vo, £5 5s.

VIRCHOW.—Post-Mortem Examinations: a Description and Explanation of the Method of Performing them, with especial reference to Medico-Legal Practice. By Professor RUDOLPH VIRCHOW, Berlin Charité Hospital. Translated by Dr. T. B. SMITH. Second Edition, with 4 Plates. Fcap. 8vo, 3s. 6d.

WILKS AND MOXON.—Lectures on Pathological Anatomy. By SAMUEL WILKS, M.D., F.R.S., Physician to, and late Lecturer on Medicine at, Guy's Hospital; and WALTER MOXON, M.D., F.R.C.P., Physician to, and Lecturer on the Practice of Medicine at, Guy's Hospital. Second Edition. With 7 Steel Plates. 8vo, 18s.

PSYCHOLOGY.

BUCKNILL AND TUKE.—A Manual of Psychological Medicine: containing the Lunacy Laws, Nosology, Ætiology, Statistics, Description, Diagnosis, Pathology, and Treatment of Insanity, with an Appendix of Cases. By JOHN C. BUCKNILL, M.D., F.R.S., and D. HACK TUKE, M.D., F.R.C.P. Fourth Edition, with 12 Plates (30 Figures). 8vo, 25s.

CLOUSTON.—Clinical Lectures on Mental Diseases. By THOMAS S. CLOUSTON, M.D., Lecturer on Mental Diseases in the University of Edinburgh. With Coloured Plates. Crown 8vo. [Nearly ready.]

PHYSIOLOGY.

CARPENTER.—Principles of Human Physiology. By WILLIAM B. CARPENTER, C.B., M.D., F.R.S. Ninth Edition. Edited by Henry Power, M.B., F.R.C.S. With 3 Steel Plates and 377 Wood Engravings. 8vo, 31s. 6d.

DALTON.—A Treatise on Human Physiology: designed for the use of Students and Practitioners of Medicine. By JOHN C. DALTON, M.D., Professor of Physiology and Hygiene in the College of Physicians and Surgeons, New York. Seventh Edition. With 252 Engravings. Royal 8vo, 20s.

FREY.—The Histology and Histo-Chemistry of Man. A Treatise on the Elements of Composition and Structure of the Human Body. By HEINRICH FREY, Professor of Medicine in Zurich. Translated by ARTHUR E. BARKER, Assistant-Surgeon to the University College Hospital. With 608 Engravings. 8vo, 21s.

SANDERSON.—Handbook for the Physiological Laboratory: containing an Exposition of the fundamental facts of the Science, with explicit Directions for their demonstration. By J. BURDON SANDERSON, M.D., F.R.S.; E. KLEIN, M.D., F.R.S.; MICHAEL FOSTER, M.D., F.R.S.; and T. LAUDER BRUNTON, M.D., F.R.S. 2 Vols., with 123 Plates. 8vo, 24s.

SURGERY.

BRYANT.—A Manual for the Practice of Surgery. By THOMAS BRYANT, F.R.C.S., Surgeon to, and Lecturer on Surgery at, Guy's Hospital. Third Edition. With 672 Engravings (nearly all original, many being coloured). 2 vols. Crown 8vo, 28s.

SURGERY—*continued.*

BELLAMY.—The Student's Guide to Surgical

Anatomy; a Description of the more important Surgical Regions of the Human Body, and an Introduction to Operative Surgery. By EDWARD BELLAMY, F.R.C.S., and Member of the Board of Examiners; Surgeon to, and Lecturer on Anatomy at, Charing Cross Hospital. Second Edition. With 76 Engravings. Fcap. 8vo, 7s.

CLARK AND WAGSTAFFE. — Outlines of

Surgery and Surgical Pathology. By F. LE GROS CLARK, F.R.C.S., F.R.S., Consulting Surgeon to St. Thomas's Hospital. Second Edition. Revised and expanded by the Author, assisted by W. W. WAGSTAFFE, F.R.C.S., Assistant-Surgeon to St. Thomas's Hospital. 8vo, 10s. 6d.

DRUITT. — The Surgeon's Vade-Mecum; a

Manual of Modern Surgery. By ROBERT DRUITT, F.R.C.S. Eleventh Edition. With 369 Engravings. Fcap. 8vo, 14s.

FERGUSON.—A System of Practical Surgery.

By Sir WILLIAM FERGUSON, Bart., F.R.C.S., F.R.S., late Surgeon and Professor of Clinical Surgery to King's College Hospital. With 463 Engravings. Fifth Edition. 8vo, 21s.

HEATH.—A Manual of Minor Surgery and

Bandaging, for the use of House-Surgeons, Dressers, and Junior Practitioners. By CHRISTOPHER HEATH, F.R.C.S., Holme Professor of Clinical Surgery in University College and Surgeon to the Hospital. Seventh Edition. With 129 Engravings. Fcap. 8vo, 6s.

By the same Author.

A Course of Operative Surgery: with

Twenty Plates drawn from Nature by M. LÉVEILLÉ, and Coloured by hand under his direction. Large 8vo, 40s.

ALSO,

The Student's Guide to Surgical Diag-

nosis. Second Edition. Fcap. 8vo, 6s. 6d.

MAUNDER.—Operative Surgery. By Charles

F. MAUNDER, F.R.C.S., late Surgeon to, and Lecturer on Surgery at, the London Hospital. Second Edition. With 164 Engravings. Post 8vo, 6s.

SURGERY—*continued.*

PIRRIE.—The Principles and Practice of Surgery. By WILLIAM PIRRIE, F.R.S.E., late Professor of Surgery in the University of Aberdeen. Third Edition. With 490 Engravings. 8vo, 28s.

SOUTHAM.—Regional Surgery: including Surgical Diagnosis. A Manual for the use of Students. Part I., the Head and Neck. By FREDERICK A. SOUTHAM, M.A., M.B. Oxon, F.R.C.S., Assistant-Surgeon to the Royal Infirmary, and Assistant-Lecturer on Surgery in the Owen's College School of Medicine, Manchester. Crown 8vo, 6s. 6d.

TERMINOLOGY.

DUNGLISON.—Medical Lexicon: a Dictionary of Medical Science, containing a concise Explanation of its various Subjects and Terms, with Accentuation, Etymology, Synonymes, &c. By ROBLEY DUNGLISON, M.D. New Edition, thoroughly revised by RICHARD J. DUNGLISON, M.D. Royal 8vo, 28s.

MAYNE.—A Medical Vocabulary: being an Explanation of all Terms and Phrases used in the various Departments of Medical Science and Practice, giving their Derivation, Meaning, Application, and Pronunciation. By ROBERT G. MAYNE, M.D., LL.D., and JOHN MAYNE, M.D., L.R.C.S.E. Fifth Edition. Fcap. 8vo, 10s. 6d.

WOMEN, DISEASES OF.

BARNES.—A Clinical History of the Medical and Surgical Diseases of Women. By ROBERT BARNES, M.D., F.R.C.P., Obstetric Physician to, and Lecturer on Diseases of Women, &c., at, St. George's Hospital. Second Edition. With 181 Engravings. 8vo, 28s.

COURTY.—Practical Treatise on Diseases of the Uterus, Ovaries, and Fallopian Tubes. By Professor COURTY, Montpellier. Translated from the Third Edition by his Pupil, AGNES M'LAREN, M.D., M.K.Q.C.P. With Preface by Dr. MATTHEWS DUNCAN. With 424 Engravings. 8vo, 24s.

DUNCAN.—Clinical Lectures on the Diseases of Women. By J. MATTHEWS DUNCAN, M.D., F.R.C.P., F.R.S.E., Obstetric Physician to St. Bartholomew's Hospital. Second Edition, with Appendices. 8vo, 14s.

WOMEN, DISEASES OF—*continued.*

EMMET.—The Principles and Practice of Gynæcology. By THOMAS ADDIS EMMET, M.D., Surgeon to the Woman's Hospital of the State of New York. With 130 Engravings. Royal 8vo, 24s.

GALABIN.—The Student's Guide to the Diseases of Women. By ALFRED L. GALABIN, M.D., F.R.C.P., Obstetric Physician and Joint Lecturer on Obstetric Medicine at Guy's Hospital. Second Edition. With 70 Engravings. Fcap. 8vo, 7s. 6d.

REYNOLDS.—Notes on Diseases of Women. Specially designed to assist the Student in preparing for Examination. By J. J. REYNOLDS, L.R.C.P., M.R.C.S. Second Edition. Fcap. 8vo, 2s. 6d.

SMITH.—Practical Gynæcology: a Handbook of the Diseases of Women. By HEYWOOD SMITH, M.D., Physician to the Hospital for Women and to the British Lying-in Hospital. With Engravings. Second Edition. Crown 8vo. [*In preparation.*]

WEST AND DUNCAN.—Lectures on the Diseases of Women. By CHARLES WEST, M.D., F.R.C.P. Fourth Edition. Revised and in part re-written by the Author, with numerous additions, by J. MATTHEWS DUNCAN, M.D., F.R.C.P., F.R.S.E., Obstetric Physician to St. Bartholomew's Hospital. 8vo, 16s.

ZOOLOGY.

CHAUVEAU AND FLEMING.—The Comparative Anatomy of the Domesticated Animals. By A. CHAUVEAU, Professor at the Lyons Veterinary School; and GEORGE FLEMING, Veterinary Surgeon, Royal Engineers. With 450 Engravings. 8vo, 31s. 6d.

HUXLEY.—Manual of the Anatomy of Invertebrated Animals. By THOMAS H. HUXLEY, LL.D., F.R.S. With 156 Engravings. Post 8vo, 16s.

By the same Author.

Manual of the Anatomy of Vertebrated Animals. With 110 Engravings. Post 8vo, 12s.

WILSON.—The Student's Guide to Zoology: a Manual of the Principles of Zoological Science. By ANDREW WILSON, Lecturer on Natural History, Edinburgh. With Engravings. Fcap. 8vo, 6s. 6d.

11, NEW BURLINGTON STREET.

